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ABSTRACT

Education is an economically and socially productive investment. Therefore, the educational systems in developing countries must continue to improve in quality, in efficiency, and in equality of opportunity if they are to continue serving as important instruments for improving the national economy. Yet, budgetary austerity tightens the public purse-strings, ever increasing school-age populations stretch these dwindling resources, and other social and economic factors present compelling competition for the same funds. The heavy subsidization of education implicit in traditional policy--especially of higher education at the expense of primary schooling--with its concomitant economic inefficiencies and inequities is no longer appropriate. Supported by empirical evidence, this book examines the potential effects of policy alternatives in several areas of education financing and management: (1) The contribution of private financing and selective user changes, especially in higher education, and reallocation of public spending; (2) Selective student loan and scholarship programs in higher education; and (3) Decentralization and role of private and community schools. Implementation of these policies may be difficult because of conflicts with traditional educational and political philosophies, and established administrative institutions. Included are statistical tables, case studies, instances of reform, and a bibliography. (KWL)

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Financing Education in Developing Countries

An Exploration of Policy Options

The World Bank
Washington, D.C., U.S.A.

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1 / Summary

Education is an economically and socially productive investment. In many developing countries, it is financed and provided predominantly by the government. The expansion of education therefore depends on fiscal resources. In recent years, however, adverse macroeconomic conditions and keen intersectoral competition for public funds have reduced most governments' ability to continue expanding education. At the same time, the potential contributions of households are limited by the current financing arrangements. The results are underinvestment in education and an untapped willingness of households to pay for education. In countries where the population is growing rapidly, enrollment ratios, particularly in primary schools, might even decline and thus reverse achievements in the development of education.

The current financing arrangements also result in the misallocation of public spending on education. There is evidence, deriving from the effect of schooling on earnings and productivity, that in many countries the average dollar invested in primary education returns twice as much as the one invested in higher education. Yet governments in these countries heavily subsidize higher education at the expense of primary education. In higher education, investment in some specializations yields better returns than in others, but public spending is not distributed accordingly. As a result, too many graduates are produced in some fields while there is a shortage in other fields.

Evidence also suggests that resources are not being used in schools as efficiently as they might be. In many developing countries, public spending is channeled to schools according to standard funding formulas that do little to encourage efficient use. Staffing rules, pay scales, and allocations for other school inputs are fixed so that school principals have little budgetary leeway. And often, too little is spent on these other inputs relative to teachers' salaries. Similarly, school principals have little flexibility to adapt centrally set norms (regarding teachers' qualifications, curricula, textbooks, timetables, and so forth) to suit local conditions. This problem is reinforced by the lack of competition between schools: because school managers are only remotely accountable to students and their parents, they have little incentive to find the most cost-effective way to provide the type of education families desire.

Offering across-the-board subsidies to students of all academic and economic backgrounds is inequitable as well as inefficient. Although many countries provide free education, talented students from poorer homes still find it hard to enroll because they cannot afford to forgo income or to pay for textbooks, transport, uniforms, and incidentals. The lack of a credit market for education makes this problem worse. Since poorer students cannot borrow against their future income to finance their current education, many have to drop out. Often, their places are taken by others who are less motivated and less prepared academically.

Some Policy Options

This book examines three broad policy options that could remedy the above problems. It is argued that they would result in an increase of resources flowing to education, improve their use, and ensure more equitable access to schooling. Although the suggested reforms need to be phased in gradu-

ally, and their specific content will differ among countries, the package includes three elements:

- Recovering the public cost of higher education and reallocating government spending on education toward the level with the highest social returns
- Developing a credit market for education, together with selective scholarships, especially in higher education
- Decentralizing the management of public education and encouraging the expansion of private and community-supported schools.

Recovering Costs and Reallocating Resources

Fees could be introduced or increased for higher education. In countries where students receive tuition-free higher education and allowances for living expenses, a useful first step would be to reduce these allowances and to restrict them to low-income students. A second step would be to charge tuition to recover at least part of the cost of providing higher education. Given the excess demand for higher education, these charges would generate substantial revenues without reducing enrollments. In some countries, the present pattern of public spending on secondary education also generates inefficiencies and social inequities. Depending on local conditions, a policy of increased cost recovery in secondary schools might be justified.

The fiscal resources thus raised should be reinvested where the social returns are highest. In general, they should be reinvested in education because the social payoffs to additional investments are at least comparable with the returns to alternative investments in physical capital and social infrastructure. Retaining the resources in the education sector would also make the most sense politically: cost-recovery policies are generally unpopular with the public. Unless their political costs are balanced by the prospect of more funds for education, ministries of education would probably be reluctant to accept such policies.

Within the education sector, the social profitability of additional investments will differ by level of education. In many countries, particularly where primary school enrollments are low, such as in Sub-Saharan Africa, expanding primary education or possibly raising its quality would yield the highest social payoff. In some other countries, even if primary education is not universal, it might be profitable to expand secondary education as well as selected fields in higher education. This is partly because when coverage at the primary level is extended to a geographically and academically diverse population, the unit cost tends to rise and the marginal returns tend to fall. In such situations, it would be efficient to use some of the extra funds to expand primary schooling, but allocate the rest for expanding postprimary education. Finally, in countries—such as some in Asia and Latin America—where primary education is universal and of high quality, most of the extra funds could be reinvested in secondary education and specific fields of higher education.

With increased cost recovery in higher and possibly secondary education, the economy's total (public and private) resources for education would increase. At the same time, this policy would permit a reallocation of public spending toward the levels and types of education with the highest social returns. The shift toward greater private financing would improve the quality of student selection and student performance because students would have a greater financial stake in their studies. This policy would also improve equity if the extra funds are used to expand education at the lower levels, where the lower-income groups are most widely represented. In conjunction with increased cost recovery, selective scholarships could be used to protect the access to postprimary education among talented students from poor families.

Providing Loans and Selective Scholarships

In higher education, it would be desirable to complement the shift toward greater private financing with the provision of widely available student loans and a limited number of selective scholarships. Loans enable students to finance their current studies against future income. Thus selection into higher education would not be limited to applicants with the necessary funds at the time of enrollment. To avoid this selection bias, the government could provide scholarships ample enough to finance tuition as well as living expenses. But such a generous scholarship scheme is not sustainable in the long run: over time, as an increasing number of lower-income students enroll in higher education, its fiscal cost becomes prohibitive. Thus

a better complement to increased cost recovery is widely available student loans, coupled with selective scholarships that are awarded on the basis of economic need and academic potential. Such a package provides performance incentives to all students in higher education and also helps ease the financial burden of students from poor families.

By enabling students and their families to finance current studies out of future income, student loans encourage educational investments. If the returns to higher education are high, the availability of student loans will increase the demand for higher education. In turn, increased demand will further increase the flow of private resources into education through tuition charges.

Experience with education loans in developing countries is limited, and establishing effective schemes will take time. Collection costs are likely to be high, at least initially, and default rates may also be substantial. Usually, governments must provide or guarantee funds for loan programs since the risk and cost of lending to students may be too large for private banks to absorb without prohibitive interest charges. Although many governments have subsidized student loans, this practice impairs the long-term financial viability of student loan schemes, and it is less efficient than, say, direct grants to individuals. In countries with collection problems, an alternative might be repayment in kind through national service.

In secondary education, loan schemes are probably less feasible because of the difficulty of administering a large number of relatively small loans. Thus a policy of increased cost recovery should be accompanied by a selective scholarship scheme. Because tuition and living expenses are usually much lower in secondary than in higher education, the government can sustain a substantial program of selective scholarships to the needier students even if the student population is large.

Decentralizing Management

In many developing countries, public school management is highly centralized, and the government restricts the operation of community-run and private schools. Such restrictions range from outright prohibition to strict control over fees, curricula, teachers' qualifications and salaries, and accreditation. When consistent with political systems, prohibition of private schools might be relaxed. Other restrictions on the administration and financing of both local and private schools should be assessed to increase efficiency. Some oversight may be needed to thwart fraudulent operators, maintain standards, and promote national unity. But overly stringent controls discourage community-run and private schools from contributing to educational development. Easing these controls mobilizes additional private and local resources for education without excessively increasing the government's fiscal burden.

Greater decentralization, including more leeway for private and community schools, would also improve efficiency within schools by encouraging greater competition among them. If competition increases, more educational services would be offered, costs would fall, and parents and students would have a wider choice of schools. Within the school, efficiency would increase with managerial accountability.

These policy reforms suggest a need to relax, not abrogate, central government authority. First, for newly emerging nations where national unity is still fragile, fairly rigid standards regarding curricula may be needed. Second, decentralization, whether through private, community, or local public schools, gives parents and students a greater role in choosing the quality and type of education they want and the means of delivery. To choose wisely, they must have information about educational alternatives. An important role for the central authorities would be to provide this information. They could, for example, display the results of common systemwide examinations or withhold accreditation for noncomplying schools (without necessarily prohibiting their operation). In secondary and higher education, it may be useful to provide the results of tracer studies across schools to show what types of jobs graduates obtain.

Effects of the Policy Package

As table 1 shows, charging tuition for higher education without reinvesting the revenue in education will improve student selection and equity. Since in most countries students enrolled in higher education belong to the higher-income groups, tuition charges will increase the financial stake of

Table 1. Cumulative Effects of Reforms

Policy	More funds to education	Improved resource allocation across educational levels	Improved efficiency of schools: In using school inputs	Improved efficiency of schools: In selecting students	Equity
Keeping the present system	0	0	0	0	0
Charging tuition for higher education (but not reinvesting in education)	0	0	0	+	+
Spending the extra revenue on all levels of education	+	0	0	+	+
Spending the extra revenues on lower levels of education	++	+	0	+	++
Introducing loans (and selective grants) for higher education	+++	++	0	++	+++
Decentralizing management and encouraging community and private schools	++++	++	+	++	+++

Note: 0 indicates no effect; the number of +'s indicates the relative strength of positive effects.

these students and their families in education, thus encouraging more talented and motivated students to enroll. Dropout among qualified students from poor families can be mitigated by coupling the tuition increase with a selective scholarship scheme. On balance, equity will be enhanced, unless the government favors higher-income groups in spending the revenue from increased fees.

If the extra revenue from charging tuition for higher education is spent on education at all levels in the same proportions as before, the policy reform will increase the total resources flowing to education but will not improve resource allocation within education or efficiency within schools.

If the revenue from tuition is spent for the lower levels of education, particularly primary education, the positive effects will be greater. First, the total resources going to education will further increase because public spending on primary education mobilizes supplementary private resources. Second, resource allocation will improve because returns at the lower levels of schooling are higher. Third, equity will improve because additional primary school enrollees will come from income groups lower than those of the average students at higher and secondary levels.

Introducing loans for higher education adds benefits on almost all counts. Loans mobilize more resources for higher education by tapping graduates' future earnings, even when default rates and administrative costs of loan schemes are high. They improve resource allocation because students will tend to enroll in the courses with the highest returns. And when augmented by selective scholarships, loans improve student selection and equity by allowing talented students from poor families to compete for places in higher education.

Decentralizing management and encouraging community and private schools also mobilize more resources for education from families and other local sources. But this policy's most important contribution is improved efficiency through increased competition among public schools and between private and public schools.

Policy Implementation

The policy package suggested here can have substantial beneficial effects on efficiency and equity in both the short run and the long run. But its implementation will not be easy, at least in some countries. There are three main reasons for this difficulty. First, the suggested policies go against a long-established tradition of free education. Second, some of the policies may conflict with a country's political regime; for example, encouraging the private sector might not be acceptable in a socialist country. Third, the institutional limitations in a country may mean that administering some of the proposed policies, such as launching a student loan scheme, would be difficult.

To facilitate the political and especially the institutional aspects of implementation, the policy package could be phased, with priority given to policy reforms that have the lowest administrative and political costs. The sequence and timing of steps will vary from country to country. In some countries the entire package of proposed policies is not likely to be fully implemented. For example, full recovery of student loans is unlikely for several reasons: default, dropout, repetition, temporary unemployment, and unexpectedly low earnings of graduates. But even if recovery were only partial, these policies are a significant improvement over the present situation in which students in higher education contribute little or nothing to the public cost of their education. Moving in the right direction—by beginning to reform the financing of education—is better than continuing the existing situation in most countries. If the efficiency and equity gains from the policy reforms are large enough, governments can find ways to overcome political opposition and implement the package most appropriate to the country's conditions.

Need for Further Analysis

In many developing countries, changes in the financing of education along the lines suggested here will improve efficiency and equity. More analytical work is nevertheless needed to design policies appropriate to individual country conditions. Focus on the following questions would be especially helpful in this regard:

- What are the major sources of inefficiency in the current system of providing and financing of education?
- How socially equitable are the present financing arrangements?
- What are the possibilities for recovering costs? How willing are parents and students to pay? What is the likely magnitude of the extra revenue?
- How can alternative financing arrangements improve efficiency and equity?

2 / The Issues

Education is widely accepted as a major instrument for promoting socioeconomic development, and education expenses are often the most important item in developing countries' budgets. Yet in most countries, education is not contributing all it can to development. The four major reasons are underinvestment in education as a whole, misallocation of resources among schooling levels, the inefficient use of resources within individual schools, and inequality in the distribution of educational costs and benefits among various income groups.

This book identifies a common thread in many of these problems: current arrangements for financing and providing education. Today, most countries' educational systems are characterized by substantial subsidies[1] per student (amounting to almost free education) at all levels of public schooling, particularly at the university level; centralized financial and administrative arrangements that restrict the operations of private and community schools; and limits on the availability of student loans or credit. These arrangements reflect the need to develop a skilled work force and to inculcate national values. Often, education has been perceived as benefiting society more than individuals: the externality argument. For example, forging national unity is a critical social objective for many developing countries, especially in the immediate postindependence period. Curricula are often designed to instill a sense of civic duty and to spread common social mores, ideologies, and languages. Literacy and numeracy also facilitate social and economic transactions, including the collection of taxes that finance the provision of public goods. The benefits of these activities accrue not so much to any single person but to society at large. Also, the acquisition of literacy and numeracy has been considered a basic human need, especially for those who cannot afford primary schooling: the equity argument. For these and other reasons, governments have tended to provide and subsidize educational services. Because subsidies have kept the private cost of education low, student loans have not been considered necessary.

The equity and externality arguments are indeed valid, particularly as applied to the lower levels of education. What economists call market failures may affect the education sector and justify government's continued role. But as this book confirms, the scope and nature of government involvement can be changed to improve efficiency and even equity.

Underinvestment in Education

What are the trends in the flow of resources into education? Compared with the previous five years, the average rate of growth of real public expenditure on education in developing countries declined between 1970 and 1980. Between 1975 and 1980, the most recent well-documented period, this rate was lower than national income growth for over a third of a sample of fifty-five developing countries (see appendix table 1). Meantime, growth of the school-age population is still high, at least in the poorest regions.

This trend in public expenditures on education reflects two mutually reinforcing factors: the de-

1. Subsidy is defined as the difference between the long-run cost of the service to the government and the price charged to students and their parents.

Table 2. Public Spending on Education as a Share of the Public Budget, Major World Regions, 1965–80
(percent)

Region	*1965*	*1970*	*1975*	*1980*
Africa	16.0	16.4	15.7	16.4
Asia	14.2	13.1	12.2	12.7
Latin America and Caribbean	18.7	18.9	16.5	15.3
Europe, Middle East, and North Africa	12.4	12.5	11.5	12.2
Developing countries	16.1	15.8	14.5	14.7
Developed countries	16.0	15.5	14.1	13.7

Note: Public expenditure on education includes capital and recurrent costs (see Unesco definitions, *Statistical Yearbook*). Mean percentages were calculated only from countries with data for all four periods.
Source: Appendix table 3.

cline in many countries of overall public budgets in real terms in the wake of the two major world recessions of 1974–75 and 1980–83 and the large proportion of the government budget devoted to education (see appendix table 2). With tight overall finances, intersectoral competition for resources tends to make education a "victim of budget cuts" (World Bank 1984b, p. 30). As table 2 shows, the budget share of public education declined between 1970 and 1980 in most regions. In Africa, education's share has remained stagnant on average. But some countries in the region have experienced substantial declines between 1975 and 1983: Cameroon, from 21.3 to 17.2 percent; Kenya, from 19.4 to 15.3 percent; Nigeria, from 16.5 to 9.3 percent; and Somalia, from 12.5 to 6.3 percent. Recent reports from the field indicate that the financial crisis in education has worsened.

Statistics on the private flow of funds to education are scarce, but existing data show that as a share of total national expenditures, private spending has also declined in most developing countries in recent years (see appendix table 4). The declining share of enrollments in private schools corroborates this point: in most African countries, the private share in primary and secondary enrollments has been falling (see appendix table 5). In the many countries where education is considered the state's responsibility, governments usually do not encourage the operation of private schools; in some such countries, they are prohibited by the constitution or national policy.

These trends in the allocation of total national resources to education are not consistent with investment priorities in this sector. In general, the returns to investment in education justify further increases in the resources devoted to education. Although education has expanded considerably in the last quarter century, expansion has not been great enough to drive the social rate of return on such investment near that of alternative investments (table 3). Considerable further social benefits could be reaped through additional investment in education (box 1).

The social profitability of educational investment is expected to persist. Educational development is still low in many developing countries, and rapid population growth will tighten pressures on

Table 3. Returns to Investment in Education, by Country Type and Level
(percent)

Region	*Social*			*Private*			*Number of countries reporting*
	Primary	*Secondary*	*Higher*	*Primary*	*Secondary*	*Higher*	
Africa	28	17	13	45	26	32	16
Asia	27	15	13	31	15	18	10
Latin America	26	18	16	32	23	23	10
Europe, Middle East, and North Africa	13	10	8	17	13	13	9
Developing countries	24	15	13	31	19	22	45
Developed countries	—	11	9	—	12	12	15

— Data were not available because no control group of illiterates was available.
Note: Private returns take into account only the cost of education to the individual. In contrast, social returns are based on the full cost of education to society, so they are comparatively lower.
Source: Psacharopoulos (1985).

Box 1. Education Is a Socially Profitable Investment

Considerable evidence exists on the private and social returns to investment in education in both developed and developing countries (see table 2 and World Bank 1980b). Such returns are measured by comparing the higher lifetime productivity of educated workers with the social or private costs of education. Although regional and intercountry variations are substantial, clear patterns emerge:

- Primary education is the most profitable form of investment, followed by secondary education and, finally, by higher education.
- Returns are by far highest in the poorest countries and decline with the level of economic development.
- Because subsidies are high in most countries, private rates of return are consistently higher than social returns, particularly in higher education.
- In the few countries for which time series data are available, the returns to education have remained relatively stable over time.

The data, based on observations in sixty countries, indicate that underinvestment in education continues, particularly at the primary level. This conclusion, derived mainly from data on wage employment in the modern urban sector, corroborates evidence that educated farmers are more productive. Research in eight countries shows that the annual crop yields of farmers with four years of primary schooling are on average 9 percent higher than those of uneducated farmers (Jamison and Lau 1982). The effect of education on farmers' output is considerably greater when such complementary inputs as high-yielding seeds, fertilizers, and pesticides are available, since their use requires not only literacy but also numeracy. Farming methods handed from one generation to another often require little or no formal education of farmers, but as agricultural techniques become more complex, education's effect on farmers' productivity is more pronounced. There is also evidence that educated farmers are more active in seeking agricultural extension services and make better use of them (Perraton and others 1983). A recent survey of fifty-two World Bank agricultural projects showed that providing education or training considerably increases the profitability of investment in agricultural development (Mingat 1984). Similarly, the profitability of physical investments in other sectors grows when workers have the basic skills of literacy and numeracy.

Education also generates externalities that are difficult to measure. The indirect societal benefits of having a literate population could boost and perhaps even double social returns (Haveman and Wolfe 1984). In developing countries, the indirect effects of primary education on health, nutrition, and fertility are particularly significant. The children of literate mothers are healthier and better nourished, and they have a higher life expectancy than the children of uneducated women (Cochrane and others 1980). Although the complex relationship between education and fertility is still imperfectly understood, studies in more than twenty developing countries suggest that in the long run fertility falls as literacy increases (Cochrane 1979).

existing educational systems (box 2). For all developing regions except East and Southeast Asia, the population aged 5–14 is expected to increase by at least 17 percent between 1980 and 1990 (Vu 1984). In Africa, where the projected increase will be nearly 40 percent, universal primary education will not be attainable by the year 2025 unless the proportion of GNP devoted to education nearly doubles (Lee 1984). Yet the same constraints that have caused government spending on education to stagnate are not expected to diminish in the foreseeable future. Thus, unless educational development becomes less dependent on public funds, countries will not be able to tap fully the profitability of further educational investment.

Underinvestment in education is reflected not only in a shortage of new school places but also in underspending on certain recurrent expenditures. In education, the recurrent cost problem—inadequate funding for a project's operation and maintenance—is especially severe because projects typically have high recurrent-to-capital-cost ratios (Heller 1979). In primary schools, operating costs account for 90 to 95 percent of the resources committed to education (excluding forgone income). In some countries, the inability to finance these costs

Box 2. Educational Development Is Still Low in Many Countries

Despite the worldwide increase in educational expenditure and the doubling of school enrollments in the developing world in the 1960s and early 1970s, in many developing countries fewer than half the children between the ages of 6 and 11 enroll in primary school. In 1982, fourteen countries had a primary school enrollment ratio of less than 50 percent.

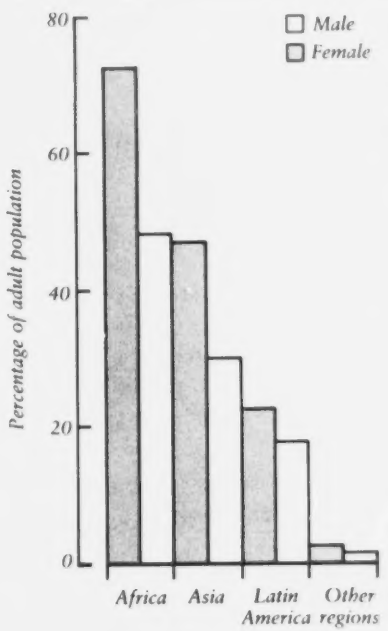
The low level of educational development in most poor countries is also reflected in high rates of adult illiteracy. In twenty-six of thirty-six African countries surveyed by Unesco in 1982, more than half of all adults were illiterate. The proportion is much higher among women, as the box figure shows.

Box Table 2. Primary School Enrollment as a Percentage of School-Age Population, 1982

Country	*Enrollment ratio of less than 50 percent*
Burkina Faso	20
Bhutan	23
Niger	23
Mali	27
Somalia	30
Burundi	32
Guinea	33
Mauritania	33
Afghanistan	34
Chad	35
Sierra Leone	39
Ethiopia	46
Yemen Arab Republic	47
Senegal	48

Source: World Bank Atlas (Washington, D.C.: 1984).

Box Figure 2. Female and Male Illiteracy Rates in 1980, by Region



Note: Refers to population aged 15 and older.
Source: Porras (1985).

may keep the government from additional borrowing. The alternative to borrowing, of course, is running schools on shoestrings. Examples abound of new government schools opened without qualified teachers, educational materials, or equipment.

Misallocation of Resources across Levels of Schooling

The social rates of return reported in table 3 suggest that in most developing countries primary education should receive the highest investment priority, followed by secondary education. Because these rates of return reflect averages for each educational level, however, they mask important variations within each level. Specific fields in higher or secondary education may be highly profitable from the social point of view. In some countries, shortages of some types of technical personnel, such as engineering and medicine, exist alongside an oversupply of graduates in other specializations. But, as a whole, primary education should receive the top priority. In addition, apart from measurable monetary rewards, investments in the lower levels of education may generate more externalities than would investments in the higher levels. These ex-

ternalities include such benefits as lower fertility and better health and nutrition (box 1).

The present financing arrangements contribute to the misallocation of resources devoted to education in the sense that the high degree of public subsidization of tertiary education boosts the demand for higher education, the relatively less socially efficient educational investment. The high subsidization of higher education is reflected in the difference between the private and social rates of return. In Africa, for example, private rates of return to higher education (which include only the cost borne by individuals) exceed social rates of return (which include the total cost to the economy) by almost 2.5 times (table 3). As a result of the strong demand for higher education, in many countries an increasing share of the resources devoted to education is spent at the higher rather than the primary level (appendix table 6).

Table 4 shows that in some regions the degree of cost recovery in education is higher at the primary level than the higher level. Subsidies in higher education have two components. First, they fully cover the direct cost of education (such as teachers' salaries and equipment), and students pay little or no tuition. Second, many students also receive living allowances, which often exceed the sum required to cover food, lodging, and transport (see box 3). In eight West African countries, such allowances account for nearly half of all public expenditure on higher education (see table 5). Such subsidies make the private returns on university studies much higher than those on other opportunities.

Historical reasons underlie the heavy subsidization of higher education. At independence, many developing countries, especially in Africa, faced an acute shortage of qualified nationals. Generous subsidies (say, through tuition-free higher education) were given to encourage a large increase in the supply of graduates who could replace expatriates in the economy. In many countries today, however, qualified nationals are less scarce; in some countries, there are even oversupplies of graduates in some fields, although shortages in others persist. Yet this pattern of finance is perpetuated because governments often respond to demands of articulate socioeconomic groups for increases in public funding for higher education, by diverting resources from more socially profitable levels of education. In short, too great a share of public resources goes to higher levels of education relative to lower ones.

Table 4. Cost Recovery in Public Education, by Region and Level of Schooling, 1980

Region	*Percentage of unit cost recovered*		
	Primary	*Secondary*	*Higher*
East Africa	6.3	16.6	2.6
West Africa	11.4	9.8	3.1
Asia	1.7	16.0	11.5
Latin America	0.9	1.7	6.6

Note: Based on evidence for twenty-seven countries.
Source: Appendix table 7.

Table 5. Share of Living Allowances to Students in the Recurrent Education Budget, by Level, Latest Year Available
(*percent*)

Region	*Primary*	*Secondary*	*Higher*
East Africa	1.8	10.2	35.2
West Africa	2.8	22.0	65.6
Asia	9.3	4.3	6.5
Latin America	3.7	4.1	17.4
Europe, Middle East, and North Africa	2.0	4.0	19.1
OECD countries	5.2	5.6	13.7

Source: Appendix table 9.

Inefficiencies within Schools

Evidence indicates that resources are not being used optimally at the school level. Often, the mix of purchased inputs, such as teachers' services and pedagogical materials, is inefficient. (In such cases, the same funds could achieve more if reallocated among educational inputs.) Inefficiency also arises when lower-income students with good learning potential are not able to secure places at the next grade level either because they drop out for economic reasons or because they cannot compete with students from higher socioeconomic backgrounds.

The present arrangements for financing and providing education contribute to both types of inefficiency. Most public school systems collect and distribute revenue for education in a highly centralized fashion. Revenues are drawn from gen-

Box 3. Living Allowances of University Students Are High

The box table shows the yearly allowances that university students in some African countries receive to cover living expenses. These allowances (direct payments) represent only a portion of total subsidies since tuition in many countries amounts to little or nothing. For most countries in Africa, these allowances represent at least 40 percent of the entire budget for higher education.

The amount given to the average university student is large by any criterion. First, student allowances exceed by more than 50 percent the amounts required to cover such standard living expenses as food, lodging, and transport. In some cases, the excess above the standard for a university student is more than a country's average per capita income. Second, the student's yearly allowance equals a significant proportion of the average yearly salary of a public servant.

In Uganda, student allowances at various tertiary institutions also represent a significant proportion of these institutions' total expenditure: in 1983, they accounted for 12 percent of the budget in Uganda Technical College, 15 percent in National Teachers' College, and a probably underreported 15 percent in Makerere University. In Francophone Africa, such allowances are even larger. Until 1981 in Mali, 43 percent of the education budget went to student allowances. In Burkina Faso, this proportion stands at 35 percent. The allowances given to University of Ouagadougou students amount to 770 percent of the country's per capita income. Similarly large sums are paid to students in the Central African Republic, People's Republic of the Congo, Republic of Côte d'Ivoire, Niger, and Togo.

Box Table 3. Annual University Allowances in Selected African Countries, 1982

Country	Allowance per student (U.S. dollars)	Allowance per student as percentage of		
		Per student public cost	Living expenses per student	Average public sector salary
Benin	836	48	307	62
Burkina Faso	1,408	54	231	63
Cameroon	1,316	44	505	43
Côte d'Ivoire	2,128	55	168	24
Kenya	659	28	—	24
Niger	1,567	65	—	43
Senegal	557	39	—	—

— Not available.
Source: Appendix table 8; Kenya from Kinyua and Olang (1984).

eral tax sources, which are then budgeted to the central ministry of education. In turn, these funds are allocated to schools and universities. In this system, administrators, students, and parents play only a marginal role in determining—indirectly through their choice of schools—how school resources are to be allocated. Typically, school administrators are accountable not to parents and students but to central authorities, such as ministries of education. Since the costs of monitoring, inspecting, and enforcing detailed guidelines for individual schools are likely to be high, these ministries set norms, such as for the distribution of budgetary allocations between teachers' salaries and other inputs. If norms do not match the school's needs or the community's preferences, as is often the case, school administrators have neither the financial power nor the incentive to change them. As a result, the use of school resources is inefficient.

The problem has worsened in recent years because the financing system has been slow (and even unable) to adapt to the scarcities of public resources for education. In most cases, managers in the public school system have no incentive or authority to adjust. Rules governing teachers' qualifications, employment, and salaries are normally inflexible, partly because teacher unions are a

powerful force in defining and protecting the status quo. Thus much of the reduction in funds for education has reduced expenditure on other categories of school inputs even more. For example, in East African countries such as the Comoros Islands, Ethiopia, Rwanda, and Tanzania, governments are hard-pressed to maintain textbook programs, especially in rural areas (Wolff 1984). Similarly, in Jamaica, a recent Unesco study shows that even though 20 percent of the state budget goes to education, primary schools and some secondary schools lack instructional materials. In fact, in most developing countries today, expenditures on instructional materials account for a minuscule amount relative to the pedagogical material used in advanced countries (table 6). These spending priorities probably correspond to an inefficient input mix, since increasing the supply of textbooks appears to be highly cost-effective in raising cognitive achievement (Heyneman and others 1984; Fuller 1985).

The high rate of repetition that characterizes many public school systems may also be a symptom of the inefficient use of resources within schools. When students have no textbooks and teachers lack relevant teaching materials, it is hardly surprising that students must repeat grades (table 7). Yet repetition does not necessarily increase learning. Table 8 shows that achievement in reading comprehension and in science and mathematics is markedly less in low-income countries than in wealthier countries. High dropout rates also indicate inefficiency. Part of the decision to drop out must be due to nonschool factors (such as the high opportunity cost of children attending school who could otherwise help out in agriculture). But some students drop out because the services provided are poor.

Inefficiencies in student selection are also partly attributable to the present financing arrangements. At the lower levels of schooling, when uniform subsidies are given to students and there is excess demand for places, some wealthier students may even invest in private tutoring or repeat a grade so as to improve their examination scores. But whereas these students may not need all the help they get, poorer students may need more to cover the personal costs of attending school and may be forced to drop out, even if they are highly motivated (box 4). In higher education, when credit markets for students are absent, only qualified students who have the requisite private funds at the time of enrollment can matriculate. If those who enroll are less motivated or talented than those who are too poor to attend, the selection of students is inefficient.

This discrimination against poor students is likely to persist even in countries where scarce places are allocated on the basis of examination scores. In Colombia, for example, 54 percent of first-year students in higher education scored lower on aptitude tests than the corresponding cohort of secondary-school graduates who did not enroll. Significantly, those who did not enter

Table 6. Annual Expenditure per Pupil on Instructional Material, 1980

Region	*Instructional material per pupil*		
	Amount (U.S. dollars)	*As percentage of all recurrent expenditure*	*Number of countries reporting*
Sub-Saharan Africa[a]	2.24	3.1	14
East Asia	2.47	1.4	5
South Asia	1.68	8.1	3
Latin America	8.99	3.9	15
Europe, Middle East, and North Africa[b]	3.28	2.0	4
Developing countries	4.80	3.4	41
Developed countries	105.50	3.6	14

Notes: Expenditure refers to nonteacher inputs in primary schools.
a. Developing countries south of the Sahara, excluding South Africa.
b. Excluding Kuwait.
Source: Appendix table 10.

higher education come from families with markedly lower incomes than those who did (Jimenez 1985).

Social Inequalities

The present distribution of public expenditures on education is highly unequal. The relatively few individuals who gain access to higher education receive more subsidies (in absolute terms) than those at the lower levels. Moreover, evidence indicates that richer groups are overrepresented at all levels of education, but especially at the university level.

The disparity of public expenditure per student among levels of education (relative to per capita income) is shown in the first three columns of table 9. Public expenditure per student increases rapidly with the level of education, especially in African

Table 7. Mean Repetition and Survival Rates in Primary Schooling, Latest Year Available

Region	*Percentage surviving to last grade*	*Percentage repeating last grade*	*Number of countries reporting*
East Africa	70.5	11.4	11
West Africa	70.2	32.1	14
Asia	56.9	9.1	9
Europe, Middle East, and North Africa	80.0	13.3	12
Latin America and Caribbean	61.2	6.1	18
Developing countries	67.7	14.5	64
Developed countries	91.1	8.5	4

Note: Last grade is defined as sixth grade.
Source: Appendix table 11.

Table 8. Achievement of Ten- to Fourteen-Year-Olds by GNP Per Capita in Selected Countries

Type of standardized test	*Number of countries*	*1971 GNP per capita (U.S. 1971 dollars)*	*Mean test score*
Science/mathematics	9	100–450	24.3
	7	450–1,230	27.5
	13	>1,230	32.5
Reading comprehension	3	<800	9.0
	3	>2,000	26.8

Source: Appendix table 12.

Table 9. Public Expenditure per Student on Education and Enrollment Ratios, Major World Regions, around 1980

Region	*Public expenditure per student as percentage of per capita GNP*			*Enrollment ratio (percent)*			*Number of countries reporting*
	Primary	*Secondary*	*Higher*	*Primary*	*Secondary*	*Higher*	
Anglophone Africa	18	50	920	77	17	1.2	16
Francophone Africa	29	143	804	46	14	2.4	18
South Asia	8	18	119	71	19	4.4	4
East Asia and Pacific	11	20	118	87	43	9.1	6
Latin America	9	26	88	90	44	12.0	19
Middle East and North Africa	2	28	150	82	36	9.4	11
Developing countries	14	41	370	75	23	6.9	74
Developed countries	22	24	49	100	80	21.0	20

Source: Mingat and Tan (1985b).

Box 4. Inefficiency within Schools Stems from Improper Student Selection

Educational subsidies contribute to inefficiency in the selection of students because they do not take incomes and students' academic backgrounds into account. Children in rural areas often pay lower fees than their urban counterparts, but this advantage may not compensate for the differences in incomes and the direct and indirect costs of attending school. For rural children, the direct costs tend to be higher because distances from home to school are greater. And because school attendance often conflicts with children's agricultural work, the indirect costs from forgone production are substantial. In urban areas, forgone production may also be an important cost for poor children who need to help with their families' businesses.

These costs influence families' schooling decisions. When public subsidies are inadequate, families may terminate their children's schooling, even if their children have academic potential. In a survey in Karnataka, India, nearly half of the parents cited cost as the primary reason for terminating their children's schooling (see the box table).

The selection of students is also inefficient if differences in academic achievement among students are not taken into account in the distribution of education subsidies and if subsidies are provided uniformly to repeaters and nonrepeaters. In such cases, poor but talented students might be excluded from the next level of schooling even if examination scores are the basis of selection since most poor students cannot afford to pay for private tutoring (a commonly used means of boosting examination scores) or to repeat a class. In Kenya, for example, Somerset (1974) notes that "even [a] highly intelligent candidate [may fail] to gain entrance to secondary school at his first attempt because he is competing with pupils who have had the advantage of at least one more year's intellectual growth" (p. 179).

Box Table 4. Parents' Reasons for Terminating a Child's Schooling, Karnataka, India, 1981–82
(*percent*)

Reason	*Sons*	*Daughters*	*All children*
Lack of academic aptitude	55	35	46
Direct or indirect cost	44	44	44
Other	1	21	10

Source: Caldwell and others (1985).

countries, where public expenditure per student on higher education is twenty-eight (Francophone Africa) and fifty (Anglophone Africa) times that on primary education. Moreover, relatively few people benefit from high public expenditure per student in higher education. For the developing countries as a group, only 7 percent of the school-age population enroll in higher education. As the sixth column of table 9 shows, access to higher education is especially limited in Africa and, to a lesser extent, in South Asia. Moreover, most of the few who benefit from heavily subsidized higher education come from relatively wealthy homes. Table 10 shows that in Chile, Colombia, Indonesia, and Malaysia, students from the upper-income groups receive between 51 and 83 percent of all public expenditures on higher education, whereas those from lower-income families receive between 6 and 15 percent.

Those who enter higher education have benefited not only from high unit public expenditure at this level of education, but also from public expenditure on primary and secondary education. The distribution of cumulative expenditure on education received by individuals who have already left the school-age range provides a longer-term view of this inequality. Figure 1 is a Lorenz curve de-

Table 10. Share of Higher Education Subsidies Received by Different Income Groups
(*percent*)

Country	*Income group*		
	Lower	*Middle*	*Upper*
Chile	15	24	61
Colombia	6	35	60
Indonesia	7	10	83
Malaysia	10	38	51

Note: The lower-income group corresponds to the poorest 40 percent except in Chile, where it corresponds to the poorest 30 percent.
Source: Appendix table 13.

Figure 1. Distribution of Cumulative Public Educational Expenditure in the Adult Population, around 1980

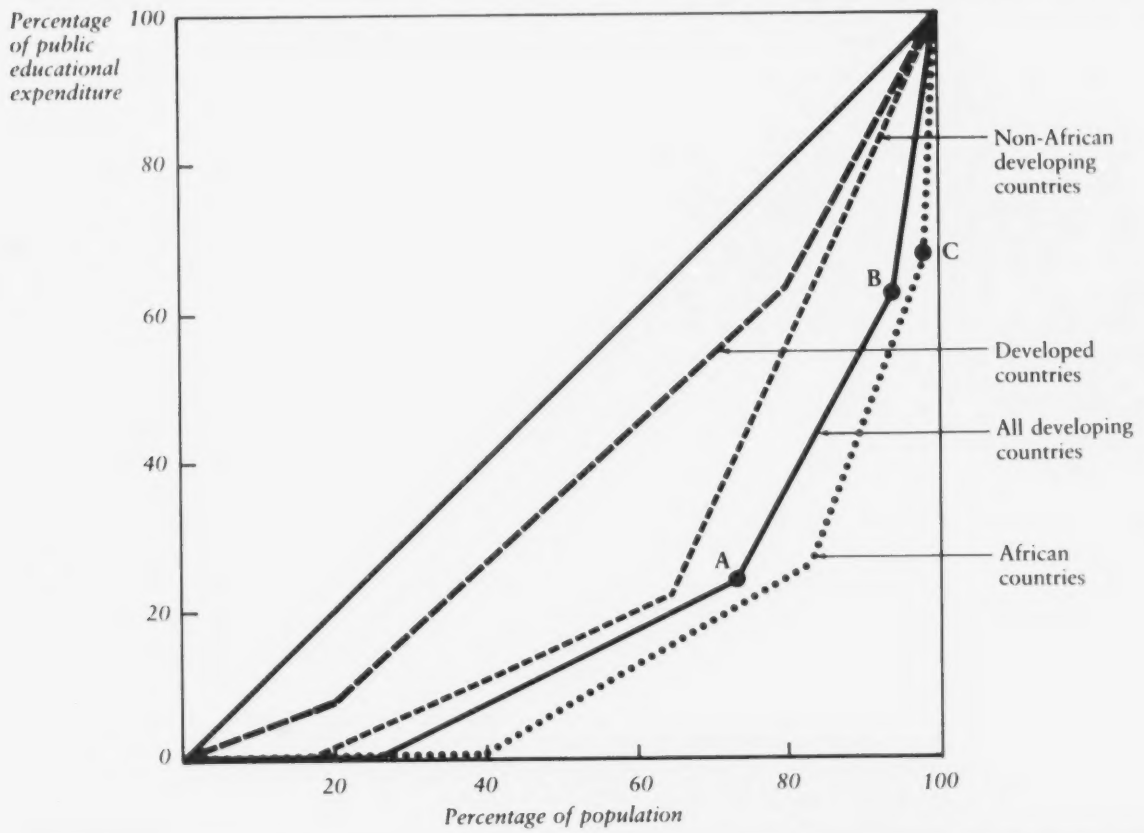


Table 11. Share of Cumulative Public Educational Expenditure Appropriated by Various Socioeconomic Groups, World Regions, 1980

Region[a]	Percentage in the population (1)			Percentage of educational expenditure appropriated (2)			Appropriation ratio (2)/(1)		
	Rural workers	Manual workers	White-collar	Rural workers	Manual workers	White-collar	Rural workers	Manual workers	White-collar
Anglophone Africa	76	18	6	56	21	23	0.73	1.19	3.78
Francophone Africa	76	18	6	44	21	35	0.58	1.15	5.93
Asia	58	32	10	34	38	28	0.59	1.19	2.79
Latin America	36	49	15	18	51	31	0.49	1.04	2.03
Middle East and Africa	42	48	10	25	46	29	0.60	0.35	2.87
Developing countries	58	33	9	36	35	29	0.60	0.98	3.48
Developed countries	12	53	35	11	46	43	0.95	0.87	1.20

a. The number of countries included in each region is given in appendix table 14.
Source: Mingat and Tan (forthcoming) and appendix table 14.

picting the share of public educational expenditure (vertical axis) appropriated by the out-of-school population, ranked according to the terminal level of education (horizontal axis). Perfect equality is represented by the 45-degree line, so the more the curve deviates from the 45 degrees, the more unequal the distribution. In developing countries as a whole, those who have had no schooling or only primary schooling represent 71 percent of the population but receive only 22 percent of all public expenditures on education (point A in figure 1). Those who have attained less than university education constitute 94 percent of the population and have received 61 percent of these expenditure (point B). Thus, the 6 percent who have attained higher education receive 39 percent of all public expenditure. In Africa, the distribution is even more unequal since the 2 percent who have attained higher education have obtained 39 percent (point C) of the total.

Inequality is exacerbated in that children from higher-income groups are overrepresented in the education system, especially in higher education. As table 11 shows, they appropriate relatively more of public expenditure than lower-income students. Because developing countries have little data on income, distribution is categorized by occupation rather than income. But assuming that white-collar workers earn more than manual laborers, who in turn earn more than farmers, higher socioeconomic groups enjoy a disproportionately large share. On average, the children of white-collar workers in developing countries accumulate four to five times as much public education expenditure as do the children of rural workers. In Francophone Africa, children from white-collar families accumulate over ten times as much as the children of rural workers.

3 | *Policy Options*

This chapter identifies policies that could redress the inefficiencies and inequalities reported in chapter 2. Providing universal prescriptions is impossible since policies must be adapted to each country's situation. But a core of general policies can serve as guidelines for all countries. Suggested here is shifting part of the burden of financing education from the state to the beneficiaries: students and their families. To this end, the following policies could be considered, possibly as a package:

- Recovering the public cost of higher education and reallocating government spending toward the level with the highest social returns
- Developing a credit market for education, together with selective scholarships, especially for higher education
- Decentralizing the management of public education and encouraging the expansion of private and community-supported schools.

These policy options may at first appear politically unpalatable or administratively unfeasible. Indeed, it may well be difficult to redistribute educational subsidies from the most articulate social group (higher education students and their urban families) to those living in rural areas. It may be equally difficult to advocate private schools in socialist countries or in countries where they may reinforce social divisiveness. And it may be even more difficult to create a credit market for education in a country where the commercial banking system is underdeveloped. Yet, as argued below, gradual policy changes along these lines are feasible and are already taking place in countries with widely differing political regimes. What follows is an elaboration of why the proposed policies might help promote development.

Selective User Charges and Reallocation of Public Spending

One way to increase the efficiency and equity of a public education system is to impose selective charges at higher levels of education and redistribute the revenue to lower levels. Such reallocation would help expand the most productive form of educational investment (which is often primary schooling), redirect state subsidies from the relatively wealthy socioeconomic groups to the poorest, and thus further both efficiency and equity.

Increasing Private Contributions at Secondary and University Levels

Given the heavy subsidization of higher education in most countries, this level of education is the natural starting point for raising charges in education. There are two ways of doing this:

- Reducing student allowances. This may be the most feasible method in countries where students receive both tuition-free education and pocket money.
- Charging for services. Besides reducing allowances, authorities could start charging for tuition to recover at least part of the cost of education. Evidence indicates that people are willing to pay for education. In Africa, private returns to higher education are so high that even after student allowances are reduced or fees imposed, higher education will remain an attractive personal investment (see table 3).

One manifestation of high private returns is the strong persistence in many developing countries of excess demand for education, especially at the uni-

versity level. There are more willing students than available places (box 5). This excess demand is reflected in the high ratio of applicants to entrants for higher education, as well as in the large number of developing-country students who apply to foreign universities. (The higher quality of foreign institutions is another reason why students study abroad.) Although the costs at foreign institutions are often much higher, many students are prepared to work or borrow from relatives and friends to obtain the necessary funds.

The available evidence suggests that, in many developing countries, excess demand is so great that an increase in fees for higher education would not affect overall enrollments much. Evidence also suggests that households' demand for education is relatively unresponsive to increases in private costs (box 6). This implies that, within limits, a rise in

Box 5. Excess Demand for Education Is High

Demand for education is excessive when there are not enough places in school to accommodate all who wish to enroll. Excess demand is common in heavily subsidized systems where students bear little (if any) of the cost of providing educational services. But because government finances are tight, only a limited number of students can be accommodated in such systems.

Excess demand is especially evident in higher education. In Kenya, for example, only 21 percent of qualified secondary graduates found university places in 1981 (Hinchliffe 1984). In Nigeria, the average acceptance rate for university education was only 16 percent in 1979–80; in some specialties, such as business administration and law, it was even as low as 8 and 5 percent, respectively (Adesina 1982; Hinchliffe 1984). In Somalia, only 13 percent of the qualified students are expected to gain admission to universities over the next five years. In Singapore, the average acceptance rate was 43 percent in 1978, but it was much lower for dentistry (26 percent) and business administration (37 percent) (Pang 1982). In several Latin American countries, two students on average apply for each university place (Schiefelbein 1985). In some countries, excess demand is not limited to public higher education. In Indonesia, for example, where private higher education is in its infancy, a recent study (Hanovice 1984) of private institutions shows that although fees are charged, only 30 percent of the applicants can be accommodated.

High repetition rates at the secondary level sometimes indicate unsatisfied demand for higher education. In Mauritius, more than 40 percent of secondary students repeat at least one grade to improve their chances of admission to higher education.

Often, local facilities cannot meet the private demand for higher education. Consequently, a large and growing number of students from developing countries study abroad at their own expense (Lee and Tan 1984). For example, one of four higher education students in Greece (where private universities are constitutionally prohibited) attends a foreign university, often with the family's financial support. In Malaysia, where the government restricts the operation of private institutions, a third of the country's third-level students in the early 1980s were studying abroad because local universities and colleges could not accommodate them. Many Thai students enrolled in foreign institutions because of a shortage of local places. In 1971, for example, when only 30 percent of the applicants were accepted locally, between 10,000 and 30,000 Thai students went abroad (Watson 1981). With the enactment of the Private Colleges Act, which permitted private institutions to open, the number of students going abroad for education dropped. In 1978, some 7,000 students were enrolled in business, accountancy, and language classes in local private institutions.

Excess demand for education is not limited to higher education. In Malawi, secondary school places meet only a third of the demand (Tan and others 1984). In Kenya, a large proportion of students retake the secondary entrance examination to improve their chances of admission (Somerset 1974). In Tanzania, demand is so strong that many of those who fail to get into public secondary schools enroll in private institutions.

Excess demand may exist even at the primary level in some urban areas. In Mali, some parents enroll children who fail to get into public schools in Quranic (Medersa) schools, which charge a fee. In other countries, the strong demand is reflected in the large class sizes in the first grade of primary schooling. For example, class size often reaches 140 in Lesotho and 150 in Guinea (Ainsworth 1984).

Box 6. Enrollment Might Not Fall If Fees Increase

Where tuition costs are low, many countries have excess demand for education at the higher and secondary levels. Increased fees will lower excess demand, but they will have virtually no effect on overall enrollment.

Even if there is no excess demand, the enrollment declines caused by a moderate rise in fees are relatively small. In developing countries, fees are usually a small component of the total private cost of schooling. Studies show that educational demand is relatively unresponsive to moderate increases in the private cost of education—price inelastic, as economists say. Of course, how inelastic this price is depends upon how demand is measured. In Colombia, for instance, where demand was measured by household spending on education, the percentage drop in demand was less than the percentage increase in price (see appendix table 15). Thus, total spending on education could be expected to increase after fees rise. In Malaysia, demand was measured by the proportion of children attending school. Thus, a 1 percent increase in the cost of sending another child to school could be expected to result in a drop of less than 0.04 percent (elasticity, or $e = -0.039$) in the proportion of the cohort aged 6 to 11 years going to school. The drop in the proportion of the cohort aged 12 to 18 going to school was even less—about 0.01 percent ($e = -0.012$).

Each elasticity reported in appendix table 14 represents an estimate at a specific point along a demand curve that characterizes the relationship between desired schooling and the private costs of obtaining schooling. Since elasticity may differ at different cost levels or for different household incomes, the impact of large fee increases would depend upon assumptions made about the shape of the demand curve over a broader range of fee increases.

fees would mostly reduce excess demand and would not cause a large proportion of those currently enrolled to drop out.

In several countries that have increased tuition fees, enrollments have fallen less than expected. In Mauritius, for example, fees have recently been introduced for university education, but enrollments have not fallen.

Increased private financing might also be justified and feasible at the secondary level. In many countries, secondary students are lodged and boarded in tuition-free schools; this policy generates excess demand for secondary school places and necessitates rationing. Here, too, increasing user charges might be appropriate since such a policy could increase both efficiency and equity. Again, the extent to which fees could be increased depends on such country-specific conditions as the degree of excess demand and the elasticity of demand.

Effects on Allocative Efficiency

The resources generated by increased private contributions should be used to expand investment in education since the social returns to such investments are high. The extra funds could be used to expand the supply of school places or to improve educational quality through increases in expenditure per pupil. Which educational level should benefit from the increased revenue and whether expansion should be quantitative or qualitative are policy choices that depend on each country's conditions. In general, however, the resources generated by the increases in private financing should be used to expand educational investments whose marginal social rate of return is highest. Although in some countries it may be politically difficult to use funds from one level to expand another, heeding this basic principle would ensure that the extra funds are used as efficiently as possible.

In countries where primary enrollment rates are low, the marginal returns to primary school expansion are most likely to exceed those to secondary and higher education. In such cases, it would be socially profitable to use the extra revenue from the increased private financing of higher education to expand primary education.

In some countries, an increase in private contributions to the financing of secondary education could also further the expansion (or improvement) of education. For example, in 1978 the govern-

Box 7. With User Charges, Education Can Expand with No Loss of Equity: An Example from Malawi

Secondary education is not well developed in Malawi; in 1982, only 4 percent of the population of secondary school age attended secondary school, compared with 63 percent in primary school. The relative scarcity of secondary graduates is reflected in the high social returns at this level of schooling: 21 percent for lower secondary and 15 percent for upper secondary (Mingat and Tan forthcoming). Increasing investment in secondary education therefore benefits society.

In recent years, however, Malawi's government has had to restrain increases in public spending on education because of economic difficulties. Demand for places in secondary education has, as a result, outstripped supply. In 1982, only 17,000 of the 50,000 candidates could be accommodated.

Each student place in secondary education cost 266 Malawian kwacha (K), about US$280, in 1982. On average, students paid K30 in tuition and K71 in boarding charges. The revenue from these fees recovered about 38 percent of the total cost of public secondary education. The actual cost to the government of enrolling each student was therefore K165 (0.62 × K266) a year.

The families of Malawian students also incur substantial expenses for uniforms and transport to school. Even so, increasing tuition fees is unlikely to lower enrollment. At the current fee level of K30, a 1 percent increase in fees would lower demand for secondary education by only 0.03 percent (Mingat and Tan forthcoming). Even if demand were more responsive to the cost of education, an increase in tuition fees would reduce only excess demand, not overall enrollment.

The impact of a fee increase on student enrollment is shown in the box figure. For illustrative purposes, the elasticity of demand is held constant at −0.5; thus, demand drops 0.5 percent for every 1 percent increase in fees alone. Because fees represent only a small portion of all private costs—including forgone income and direct expenditures—the demand based on this assumption is highly elastic with respect to all private costs. A lower (and more realistic) magnitude for the elasticity would reinforce the results shown here. The government outlay for public secondary education is assumed to stay at the current level, and the extra revenue generated by the fee increase is to be used solely to create more places for secondary students.

If tuition fees were kept below K95, demand for secondary education would still exceed the supply of places. If fees were raised to K95, the additional revenue generated would help secondary education expand by 65 percent (or by 11,100 places.) Of course, fewer places would open up if demand were much more elastic. (If elasticity were, say, −1.0 instead of −0.5, increasing fees to K68 would eliminate excess demand and the revenue generated would increase the present supply by 30 percent, or by 5,100 extra places.) Larger elasticity magnitudes, however, fly in the face of the empirical evidence available for Malawi or other countries. These calculations show that increasing user charges for secondary education would be socially efficient since the funds so generated would allow more investment in secondary education.

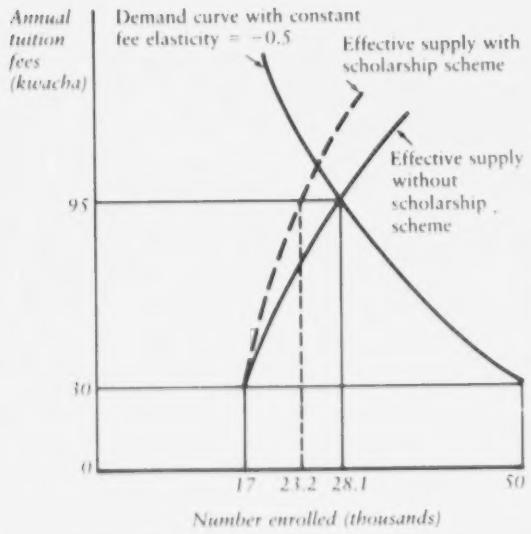
Is increasing fees inequitable? The possibility that some poor students might be forced to terminate their schooling could be mitigated by providing scholarships selectively to these students. The efficiency gains (the net benefits to society) in this case would be smaller since the scholarships would require funds that could otherwise be used to increase the availability of secondary places. If fees were raised to K95 and if the constant fee elasticity of demand were −0.5, 44 percent of the students cur-

ment of Bhutan spent more on secondary school scholarships than on primary education. If these scholarship funds were reallocated to primary education, primary school enrollment could nearly double. In Botswana, public expenditure devoted to scholarships at the secondary level represents about 20 percent of the total primary school budget. If the costs of board and lodging were privately financed, the public funds saved could be used either to increase investment in primary education or to expand the supply of secondary school places.

The choice between these alternatives again depends on the relative returns to additional investment in the two levels of education. As shown, in countries with a low primary enrollment rate, the returns on primary school expansion are likely to exceed the returns on secondary education. But in

rently enrolled would drop out, and their places would be taken by those who can afford the increased fees. To avoid this outcome, potential dropouts could be compensated fully with scholarships. (This assumption is conservative: some students could probably continue their studies with less than full scholarships.) If the fee increase were accompanied by scholarships, secondary education in Malawi could still expand from 17,000 places to 23,200, compared with 28,100 places without scholarships (see the box figure).

Box Figure 7. Possible Expansion of Secondary Education in Malawi through User Charges, with and without Scholarship Scheme for Potential Dropouts



some other countries, even if primary education is not universal, it might be more profitable to expand secondary education since unit costs tend to rise and marginal returns to fall as coverage at the primary level is extended to an even more geographically and academically diverse population. As a result, it might be socially profitable to use only some of the extra funds to expand primary education and to allocate the rest to expanding secondary education or even selected fields within higher education. Although the relative social profitability of educational investments varies with country conditions, setting investment priorities according to their social returns is still valid. Box 7, using data from Malawi, illustrates the potential expansion in secondary education that could be achieved by increased user charges at this level of study.

Estimates for twelve African countries illustrate the potential for expanding primary education through increased private contributions in higher education. As table 12 shows, by merely eliminating living allowances, enough public resources would be freed to allow, on average, an 18 percent expansion in the yearly primary education budget. These extra funds could be used to finance an increase in educational quality or in the coverage of the primary-school-age population. An additional expansion of 23 percent could be achieved if fees were introduced to recover all operating costs in higher education. Thus, if both kinds of subsidies to higher education were fully withdrawn, the primary education budget could be expanded by an average of about 40 percent in the twelve African countries. (The result overstates the potential expansion since some of the "saving" would have to

Table 12. Potential Increase in the Primary Education Budget in Selected African Countries, around 1980
(percent)

Country	*Increase in primary education budget if higher education students bear entire cost of*		
	Living expenses	*Operating cost*	*Both*
Benin	18.9	5.0	23.9
Burkina Faso	18.6	8.0	26.6
Central African Republic	12.4	4.0	16.4
Congo	17.6	5.8	23.4
Côte d'Ivoire	21.0	19.2	40.2
Malawi	8.6	45.8	54.4
Mali	21.6	8.6	30.2
Niger	9.6	2.4	12.0
Senegal	20.4	48.5	68.9
Sudan	2.9	40.2	43.1
Tanzania	24.2	31.0	55.2
Togo	40.4	51.6	92.0
Average	18.0	22.5	40.5

Source: Based on Mingat and Tan (1985b) and World Bank estimates for Benin and Sudan.

finance the cost of a loan scheme and selective scholarships for higher education, as discussed in the next section, "Student Loans and Selective Scholarships.")

Clearly, how much primary education could be expanded varies from country to country. In the Côte d'Ivoire, Malawi, Senegal, Sudan, Tanzania, and Togo, the potential expansion in the primary school budget ranges from 40 to 90 percent. Among these countries, only Togo and Tanzania have attained or almost attained universal primary education and could thus use the generated resources to bolster educational quality. In the remaining countries, the enrollment ratio in primary education would rise dramatically—from 76 to 100 percent in the Côte d'Ivoire, 59 to 91 percent in Malawi, 48 to 81 percent in Senegal, and 51 to 73 percent in Sudan—if the additional resources were used for quantitative expansion (table 13).

In such countries as Benin, Burkina Faso, Central African Republic, Congo, Mali, and Niger, however, public savings from higher education would be small because enrollment is low. Consequently, the savings would permit a much smaller expansion of the primary school budget. Table 13 shows that in Burkina Faso, Mali, and Niger, universal primary education would remain far beyond reach even if all the additional resources were used to increase coverage at the present cost per student. Besides mobilizing more private resources to finance higher education, other policy options for expanding primary education would have to be considered, including reducing the length of the primary school cycle.

Table 13. Current and Potential Primary Enrollment Ratio in Selected African Countries
(percent)

Country	*Current enrollment ratio*	*Potential primary enrollment ratio with full cost recovery in higher education*[a]
Benin	65	81
Burkina Faso	20	25
Central African Republic	68	79
Côte d'Ivoire	76	100
Malawi	59	91
Mali	27	35
Niger	23	26
Senegal	48	81
Sudan	51	73
Average	49	66

a. Full cost recovery refers to the elimination of university student allowances and introduction of tuition payments to cover operating costs.

Source: Table 12 and Unesco enrollment statistics, *Statistical Yearbook*.

The generated revenue could also be used to improve the quality of education. For example, many middle-income developing countries in Asia and Latin America, as well as a few countries in Africa, have almost achieved universal primary education. The quality of primary education, however, is often low. (The significant effects of improving school quality in all developing countries have been reviewed by Fuller, 1985.) In particular, a high gross enrollment ratio in primary education (that is, the number of children enrolled as a percentage of the primary-school-age population) often hides important inefficiencies if only six of ten students complete the primary school cycle.

For some countries, there are high returns to expanding secondary education. Public expenditures, however, have often been directed at the less efficient modes of learning within this level. For example, many governments have attempted to introduce vocational training into secondary curricula with the argument that the change would help to prepare youths for the job market rather than for advancement to the next level of education. But recent research in Colombia and Tanzania suggests that this policy has increased costs without significantly improving the social benefits of secondary education (Psacharopoulos and Loxley 1985).

Similar arguments hold for publicly financed higher education. In many countries, severe shortages of qualified engineering or managerial personnel often coexist with an oversupply of graduates from other specializations. In Thailand, for example, unemployment among humanities graduates is high, but vacancies for qualified engineers remain unfilled for months. In Peru, where the proportion of university graduates in the population is similar to that in some developed countries, the problem is one of low quality of instruction.

In brief, recovering some of the cost of higher education and spending the revenue on the most efficient use—which, depending upon country conditions, could range from improvements in primary school quality to the expansion of selected fields of higher education—would be an improvement upon present arrangements. Also, the poli-

cies suggested would tend to equalize the social rates of return to the three levels of education. Estimates indicate that reallocating the present level of public resources toward the equalization of these rates would generate efficiency gains (at a lower bound) equivalent to 0.5 percent of developing countries' GDP (Dougherty and Psacharopoulos 1977). Although these calculations are only indicative, they demonstrate the magnitude of the potential gains from reallocating educational resources with the pricing policies described.

Effects on Internal Efficiency

The introduction of fees in higher education would improve efficiency within the system because it would provide appropriate incentives, to both students and managers, to scrutinize costs more closely. In Ghana, for example, a proposal in 1970 to introduce charges for university students' board and lodging prompted student representatives to propose ways to reduce costs (Williams 1974). Greater cost-consciousness among students would also encourage them to become more aware of the cost differences between institutions. A greater demand for admission at the more efficient institutions would signal providers to expand such institutions. As a result, efficiency in the overall system would be likely to improve.

Efficiency would likely improve on at least two further counts if fees were charged. First, student selection would improve since those with little chance of succeeding would be discouraged from applying. Second, charging fees would lead to a better match between student ability and selected fields of specialization. Indeed, if heavy subsidies to higher education were reduced, the risk of failure would be shifted to some extent from the government to the individual. As a result, students would be encouraged to behave more like investors and pay close attention to their chances of completing their education.

In general, increased private financing at the primary level is not recommended since it might interfere with universal coverage—a socially desirable goal. But when resource transfers between levels of education and from other sectors are impossible for administrative or political reasons, increased user charges for primary education could increase efficiency within schools, especially if that revenue stays with the school where it was raised. Where administrative rigidities, such as those governing teachers' employment, have prevented the reallocation of resources among the various school inputs, the extra revenue could be used to increase such crucial inputs as textbooks or other teaching materials.

For example, in rural Mali, where one of three schools has no textbooks at all (Birdsall 1983a), increasing primary school fees by 10 percent would allow schools to double the average number of books per class and to provide at least one book for classes that currently have none. In a few countries, user charges have been used to finance part of the recurrent costs of education. In Lesotho, all textbook costs at the primary level are financed from fees (Ainsworth 1984). In Malawi in 1983, primary school fees were raised by as much as 50 percent in some grades. About 80 percent of the fees collected at the primary level is used to buy textbooks and writing and teaching materials. The remaining 20 percent covers the cost of repairs, water, electricity, and other consumables. Although the fee increase was substantial, a recent study (Government of Malawi 1984) shows that overall primary enrollments dropped by only 2 percent as a result.

Effects on Equity

Expanding primary education through increased private contributions in higher education would enable those who are now denied even basic education to acquire literacy and numeracy. Equality in the distribution of public expenditures on education would improve dramatically.

In developing countries, 71 percent of the people leave their school-age years with either no schooling or at most only primary schooling. Correspondingly, they will obtain benefits amounting to only 22 percent of the public expenditure on education. This share would rise to 64 percent if user charges were introduced to recover all the public costs of higher education and if the resources thus freed were used to finance additional places for those who are now denied access (Mingat and Tan 1985a). This redirection of public expenditures would particularly benefit those from lower-income groups since they are most widely represented at the primary level.

The overall effect of a change in the distribution of public expenditures on education accumulated in the primary, secondary, and higher education can be determined by comparing the Gini coefficient corresponding to the existing situation with that associated with the increased provision of primary education through full cost recovery in higher education. (A Gini coefficient value nearer 0 represents more equal distribution and a value nearer to 1 represents more unequal distribution of public educational resources.) Table 14 shows that in all regions the Gini coefficient of the distribution of public expenditure on education drops dramatically; thus, such a policy would make the distribution of public resources for education much more equal. For the developing countries as a group, the change in the Lorenz curve is shown in figure 2.

An important caveat is in order here. Within higher education, introducing fees might force some of the poorer students to end their studies. But the potential loss of equity within higher education must be weighed against the overall equity gain that will result from substantially increasing primary coverage. Moreover, any adverse affect upon equity within higher education can be mitigated, if not neutralized, with selective scholarships or fee exemptions for low-income students. (The same argument holds true for fee increases in secondary education; see the example in box 7.) In some Latin American countries, university fees are pegged to family income, so that poor students pay lower tuition fees than the more wealthy. Another way to avoid adverse equity implications is to institute loan schemes or other credit markets for education.

Expanding primary education through user charges in higher education will also improve the future distribution of income. This policy enables workers who would otherwise have been illiterate to increase their earnings. For example, in eleven developing countries (Chile, Colombia, Ghana, India, Israel, Kenya, Malaysia, Mexico, Nigeria, Philippines, and Uganda), primary education, on average, more than doubles the earnings of primary school graduates relative to that of illiterates (Psacharopoulos 1973, p. 185).

In other countries, the extra funds from increased fees in higher education would permit an improvement in the quality of primary schooling. In Latin America, for example, enrollment in primary education is nearly universal, but many students drop out before they complete this cycle of study; such pupils often lapse into illiteracy. If the quality of their education were improved, children might remain in school longer and learn more. The improvement in school quality would enhance equity by benefiting those at the lowest rung in the educational ladder and by reducing the incidence of dropout, a problem more common among children from low-income families. And among those who still drop out, the higher quality of their education might help them to acquire more knowledge before they leave school and to retain more of what they have learned.

In some countries, primary education is universal and of relatively high quality. In that case, extra funds from increased fees in higher education could be used to expand secondary schooling or selected fields in higher education. Increased access would improve equity at these levels. And if some of the extra funds were used to provide scholarships for students from poor families, equity would be improved still more.

Table 14. Gini Coefficient of the Distribution of Public Expenditure on Education, Major World Regions, around 1980

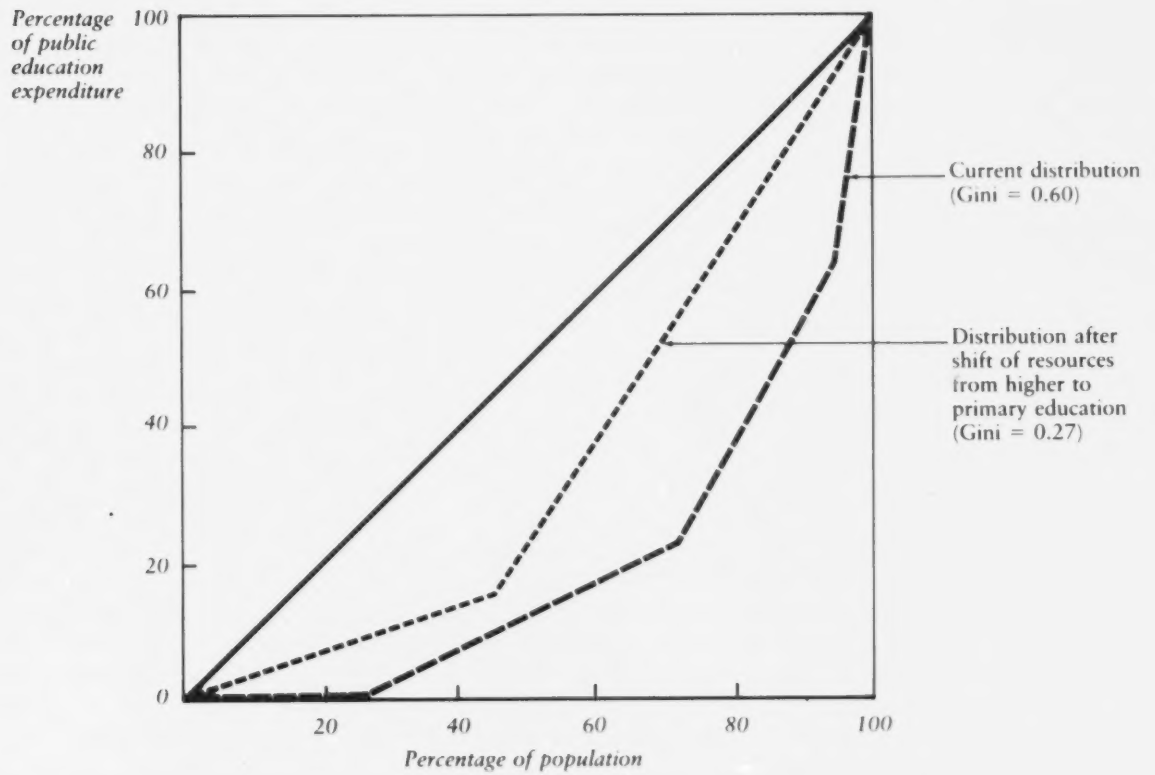
	Gini coefficient	
Region	*Actual*	*After reallocation of all higher education subsidies to primary education*
Anglophone Africa	0.57	0.27
Francophone Africa	0.82	0.45
South Asia	0.65	0.32
East Asia and Pacific	0.50	0.15
Latin America	0.50	0.20
Middle East and North Africa	0.57	0.22
Developing countries	0.60	0.27
Developed countries	0.22	0.04

Note: The reallocation is assumed to correspond to the introduction of full cost recovery in higher education.
Source: Mingat and Tan (1985a).

Student Loans and Selective Scholarships

Increasing private costs might keep qualified students from poor families out of school unless they have access to loans or grants for their education. Because few developing countries have well-func-

Figure 2. Distribution of Cumulative Public Expenditure on Education before and after a Policy Change, Developing Countries, around 1980



tioning capital markets and because students lack collateral, many individuals cannot borrow to finance their own or their children's education even though the returns on such investments are high. Tuition increases and the elimination of allowances in higher education could be supplemented by student loan schemes to improve individuals' access to financial credit. In addition, selective scholarships could reduce the loan burden on poorer students and provide performance incentive. The design of loan programs and selective scholarship schemes should be tailored to suit each country's conditions.

Creation of a Credit Market for Education

Without well-functioning commercial credit markets, people must often borrow funds from relatives, friends, or moneylenders. These sources of credit are inefficient since the ability to borrow depends on whom the borrower knows and whether willing lenders can be found.

In some countries, commercial credit markets work well, but people still face difficulties in borrowing to finance education or training. Extensive financial regulation may limit the total supply of lendable funds in the economy, and private banks may be unwilling to lend to students. Education is a particularly long-term investment, and risks are high because few students have acceptable collateral and graduates may be unable to repay loans if they are ill or unemployed. Then, too, many developing countries lack the legal or administrative framework to enforce financial contracts effectively. The administrative costs of collection tend to be high because graduates are mobile. Many

commercial banks are simply too small to absorb these high risks and costs without charging prohibitive interest rates.

Governments can play an important role in alleviating students' difficulties in obtaining educational credit. Whether they make the loans or insure commercially loaned funds, governments are big enough to absorb risks that private lenders cannot or will not bear. In addition, collection of repayment may be less problematic since most graduates can be traced through the government bureaucracy or through the income tax system. If loans are under governmental authority, employers may also be willing to make deductions from former students' salaries for loan repayment. Some types of loans, such as those for medical studies, could be repaid through national service in deprived areas of a country.

In several developed and developing countries, governments already provide educational credit (box 8). Some state-owned banks provide student loans, particularly for higher education. In some instances, a government-backed guarantee encourages private banks to provide student loans. Such schemes are popular among students in many countries. In the United States, lending to students under government guarantee has also been highly popular among commercial banks. Since the Guaranteed Student Loan Program was established in 1965, more than 20 million students have borrowed to finance their studies. In 1984–85, the program served 3.4 million students—some 28 percent of all American postsecondary students. In some developing countries, loan programs have also expanded rapidly. In Colombia, more than 30,000 student loans were awarded in 1984 for

Box 8. Students in Many Countries Can Get Loans

In more than thirty countries, students can borrow to pay tuition fees or to meet living expenses while they are enrolled in higher education.

Governments in several developed countries, including Canada, the Federal Republic of Germany, Japan, Sweden, and the United States, provide most financial aid to students as loans. Student loan programs exist in most Latin American countries, in some African countries (Kenya, Lesotho, and Swaziland), and in some Asian countries (India, Malaysia, Pakistan, Singapore, and Sri Lanka).

Because many of the loan programs were designed primarily to expand educational opportunities for the poor, the interest charged is generally below market rates. Although these programs rely heavily on public funds, some developed countries have begun to recover the cost of the loans. For example, the U.S. government's new program (Parent Loan for Undergraduate Students, or PLUS) provides little subsidy, and the German government has replaced student grants with loans as part of its policy to reduce public expenditure.

Experience in both developed and developing countries has shown that student loans are feasible, despite the problems associated with high default rates and the decapitalization of programs that occurs because real interest rates in some developing countries are low or even negative. Such problems plague other sectors, including agriculture and housing, and they are surmountable. The answer is not to abandon educational credit but rather to improve the efficiency of credit institutions and their mechanisms by aligning interest rates with those that prevail in the free market and by improving collection procedures.

Box Table 8. Number of Outstanding Student Loans, Latin America, 1978

Country and name or acronym of student loan institution	*Outstanding student loans (number)*
Argentina (INCE)	1,400
Bolivia (CIDEP)	476
Brazil (APLUB)	3,084
(Caixa Economica Federal)	354,588
Chile (Catholic University)	1,982
Colombia (ICETEX)	53,865
Costa Rica (CONAPE)	1,286
Dominican Republic (FCE)	10,097
Ecuador (IECE)	15,803
El Salvador (Educredito)	2,350
Honduras (Educredito)	1,740
Jamaica (Students' Loan Bureau)	6,875
Nicaragua (Educredito)	630
Panama (IFARHU)	5,800
Peru (INABEC)	274
Venezuela (Educredito)	2,866
(SACUEDO)	2,770

Source: Woodhall (1983).

higher education, nearly all for local study. Many students in other Latin American countries also borrow to finance their studies (boxes 8 and 9).

Critics of loan schemes argue that they are difficult and expensive to administer. The two main problems are high default rates and the high costs of collecting small loans over ten years or more from highly mobile graduates. But experience shows that these problems are sometimes exaggerated. In the United States, default rates on student loans have fallen in recent years. When allowance is made for funds collected on previously defaulted loans, the net annual default rate in 1981 was only 4 percent, which compares well with default rates on other forms of credit (Hauptman 1983). In developing countries, defaulting is more difficult to evaluate since loan schemes are relatively new. But in some countries in Latin America, where experience with loan schemes has been extensive, the incidence of default or late repayment has been

Box 9. Student Loans Can Work: The Examples of Colombia and Barbados

The first student loan in Latin America was made in 1953 by the Instituto Colombiano de Crédito Educativo y Estudios Técnicos en el Exterior (ICETEX), which was established to provide loans first for postgraduate study abroad and later for higher education in Colombia.

Between 1953 and 1963, only a few hundred loans were awarded annually, but by 1968 the number had increased to more than 4,500 loans a year. In 1984, loans totaled more than 30,000 and covered about 10 percent of all university students. Recently, loans in which repayment is borne partly by the students and partly by their parents have been introduced.

The rate of interest charged on student loans varied with the income of the graduate and repayment period. The interest was usually below the market rate, however, and because inflation rates have been high in Colombia in recent years, the graduates were paying a negative interest rate. Because of a rapid increase in lending, ICETEX depends on government funds, but in 1979 nearly US$150,000 (or 20 percent of ICETEX's total income) came from loan repayments.

In Barbados, the Student Loan Revolving Fund was established in 1977 with the help of a loan from the Inter-American Development Bank. Between 1977 and 1982, some 118 loans were provided to students for higher education or postsecondary training. A tracer study conducted in 1982 shows that most borrowers had completed their studies and that 87 percent were working in Barbados. Eighty-eight percent of the loan recipients came from families with incomes below US$9,000; after completing their studies, 65 percent earned more than that. After repaying the loan, a student could expect a private return of 26 percent on university education and 33 percent on postsecondary technical education.

The student loan program is considered a success in Barbados. Arrears are low, and in 1982 interest payments by graduates covered all administrative costs.

The government of Barbados plans to expand the student loan program by eventually converting its entire scholarship program, which in 1981–82 cost almost US$670,000, into a mixture of loan and grant, depending on the student's course of study and level of income. Students in vocational secondary education would receive 50 percent grants, undergraduates would receive 25 percent grants, and graduate students would receive none; all remaining funds would go out as loans. The planned loan scheme would enable Barbados to reduce expenditures for scholarships and shift subsidies from higher education to secondary education. Additional resources would be saved by giving teachers in-training loans instead of increased salaries.

Box Table 9. Growth of Educational Credit Provided by Colombia's ICETEX, 1953–84

	Number of student loans awarded	
Year	*For study abroad*	*For study in Colombia*
1953	74	0
1958	217	177
1963	277	907
1968	751	3,780
1973	280	14,145
1978	741	21,639
1981	619	26,371
1982	873	25,856
1983	741	22,546
1984	996	29,206

Source: Woodhall (1983, p. 30) and World Bank data.

low (Woodhall 1983). In Costa Rica, only 0.5 percent of the debts due for repayment in 1978 suffered from such problems; in Brazil, only 2 percent; in Colombia, Honduras, Jamaica, and Mexico, between 5 and 11 percent. In Ecuador, Peru, and Venezuela, however, the rates of default were much higher.

To some extent, the variation in default rates reflects differences in definition: a distinction is not always drawn between those who missed one or two payments early on and those who cannot or will not repay (Woodhall 1983, p. 48). This measurement problem aside, high default rates sometimes reflect poor recordkeeping by the loan agency or a failure to establish appropriate eligibility criteria for loans. Weak students are more likely to drop out and not have enough earnings to repay their loans. A report on the Dominican Republic concludes, for example, that "loan defaults occur almost exclusively among students who leave school before . . . [finishing] . . . the course" (AID 1981, p. 40). This finding parallels that in studies of credit schemes in other sectors. Von Pischke and others (1983), for example, show that agricultural credit schemes tend to be successful in projects that are economically sound. In such projects, substantial increases in farmers' incomes enable them to repay their loans. The selection of projects is therefore important to the success of the loan scheme. If education credit schemes are to succeed, eligibility must be closely evaluated so that loans are provided only to students who are likely to succeed in their studies.

As for administrative costs, evidence from a few countries suggests that such costs are not exorbitant (Woodhall 1983). In Sweden, the Central Student Assistance Committee (the state agency that administers student loans and other forms of assistance) calculated that in 1980–81 administrative costs represented only 1.8 percent of total expenditures on student aid. In the United States, the Congressional Budget Office estimates that in 1980 the annual cost of servicing student loans ranged between 1.5 to 2 percent of the loan principal, compared with the usual range of 0.25 to 3.75 percent for housing loans. In Latin America, one study (Herrick and others 1974) shows that in several student loan institutions 12 to 23 percent of the total annual outlay was spent on administration. Yet researchers point out that administrative costs tend to be proportionately higher for growing institutions and should fall in several countries as economies of scale increase. According to the AID, the estimated cost of administering student loans in the Dominican Republic is probably between 5 and 8 percent of the average loan of RD$1,000 to $1,500.

So far, default and collection problems have been neither intractable nor universal in most developing countries where student loan schemes have been established. Specialized institutions, such as ICETEX in Colombia or the Student Revolving Loan Fund in Barbados, can be viable. Experience in other countries, including Brazil, Pakistan, and Sri Lanka, suggests that commercial banks can be induced to set up government-guaranteed educational credit programs. In the United States, a secondary market for student loans (the Student Loan Marketing Association, or Sallie Mae) has significantly increased the volume of student loans. No secondary market exists in a developing country, but some governments pass nontraditional sources of revenue on to banks to offer as student loans. For example, some of the proceeds of Brazil's national lottery go to Caixa Economica Federal for student loans.

To date, few of the world's poorest countries have instituted loan schemes. Most Sub-Saharan African countries have opted for free higher education with substantial cost-of-living allowances; thus there is need for student loans. A few that have tried simultaneously to raise fees and institute loan schemes have experienced difficulties, sometimes for political reasons; for example, in Ghana, the policy reform in 1971 was unaccompanied by an adequate explanation of the scheme. Other countries, such as Kenya and Nigeria, experienced problems in collecting repayments. Evaluations indicate that repayment difficulties arose not because graduates could not generate enough income to repay the loans but because of faulty administration (Woodhall 1983). Because building an effective administrative institution is a prerequisite for a successful loan scheme, educational credit for low-income countries could be introduced on a small scale. As the public becomes more aware of it, and as administrators or even private financiers acquire more experience, the scheme could then be

enlarged gradually. In the transition, selective scholarships could be used more liberally to ensure access for deserving poor students.

Commonly, student loans are subsidized: borrowers pay little or no interest, and governments sometimes cover lenders' administrative costs. Such subsidies may be necessary initially to make student loans acceptable and to relieve hardship for families, unemployed graduates, or other disadvantaged groups. But dependence on subsidies implies that loan programs will never become self-financed. In addition, subsidized loan schemes are less efficient than other methods of subsidization: since the subsidies are hidden, they are likely to reach groups other than the intended recipients unless eligibility for such loans is carefully defined. If a government wants to subsidize higher education, it should make direct grants. The experience with agricultural credit schemes is again instructive. In many schemes, a main cause of failure is the low interest rates charged on the loans (von Pischke and others 1983). Since there is a substantial grant element in the loans, the programs become decapitalized over time and thus lose their viability.

The Effect of Tuition Charges and Loans on Cost Recovery

This section presents estimates of the cost recovery that can be achieved in higher education through student loans and increased tuition charges. The outcome depends on the following factors: country-specific conditions that influence the public cost of higher education per student, the profile of graduates' earnings, variations in repayment terms, and the incidence of dropout, repetition, and default.

Public expenditures and earnings for four major regions are expressed as multiples of the average per capita GNP in table 15. In the two African regions, the public expenditure per student is especially high because it includes the direct costs of education as well as student allowances for living expenses. As shown in box 3, in many African countries, such allowances accounted for about half of all public costs of enrolling each university student. In Latin America and Asia, however, students are usually expected to finance their living expenses.

Table 15. Public Expenditure per Student in Higher Education and Earnings of Graduates, Major Regions of the World, around 1980

Region	*Public expenditure per student in higher education*[a,b] (1)	*Earnings of graduates*[a] (2)	*Ratio* (2)/(1)
Anglophone Africa	9.2	10.0	1.1
Francophone Africa	8.0	19.4	2.4
Latin America	1.2	3.4	2.8
Asia	0.9	4.0	4.4

a. Unit public expenditures and salaries are annual figures, expressed as multiples of per capita GNP.

b. Includes students' allowances for living expenses; such allowances are a major component of public expenditure for higher education in Anglophone and Francophone Africa, but are negligible in Latin America and Asia.

Source: Mingat and Tan (1986b).

The data in table 15 provide a first indication of the feasibility of fully recovering public expenditures through a student loan scheme. In Asia, the relatively high ratio between graduates' earnings and the public expenditure per student in higher education suggests that students could probably afford to repay the government for their education. The corresponding ratio for Anglophone Africa, however, is relatively low, indicating that students there would be likely to have greater difficulty in repaying loans equivalent to all the subsidies they now receive from their governments.

How fully costs can be recovered under a loan scheme depends crucially on the repayment terms. It is in the government's interest to keep the repayment period short so that the loan scheme becomes self-financing rapidly. The student, however, wants a long repayment period so that the debt burden does not become insupportable, especially during temporary unemployment or the extended job search that often follows graduation. The terms a particular country can offer are strongly influenced by the political acceptability of the corresponding debt burden and by the administrative feasibility of keeping track of borrowers over an extended period.

The calculations presented in tables 16 and 17 simulate a range of outcomes corresponding to various repayment periods and to the proportions

Table 16. Student Loans in Africa: Percentage of Initial Loan Recovered under Various Repayment Terms, with Optimistic and Conservative Assumptions, around 1980

Region	Repayment (years)	Optimistic assumptions:[a] share of graduates' annual income to repay loan			Conservative assumptions:[b] share of graduates' annual income to repay loan		
		5 Percent	10 Percent	15 Percent	5 Percent	10 Percent	15 Percent
Anglophone Africa	10	16	32	49	10	20	30
	15	24	47	71	15	30	44
	20	30	60	90	19	38	57
Francophone Africa	10	36	72	108	22	45	67
	15	53	105	157	33	66	99
	20	67	134	201	43	85	128

Note: Calculations assume a 5 percent real rate of interest. Figures over 100 percent can be interpreted in one or all of the following ways: (a) a smaller proportion of income allocated for loan repayment would achieve full cost recovery; (b) a shorter repayment period would achieve full cost recovery; or (c) graduates would have the financial capacity to repay a larger loan.

a. Optimistic assumptions: all students complete their studies on time (that is, without repeating or dropping out); they start repaying their loans immediately after graduation, without the benefit of a grace period; the default rate is zero.

b. Conservative assumptions: 20 percent of the intake complete their studies on time; 30 percent repeat one year; 20 percent repeat two years; 20 percent drop out after one year; and 10 percent drop out after two years; all borrowers enjoy a grace period of two years; the default rate is 15 percent (that is, 15 percent of the borrowers fail to repay their loans).

Source: Mingat and Tan (1986b).

of a graduate's current income allocated for loan repayment. They are based on the public expenditure and salary structures shown in table 15 and they take into account that the graduates' incomes tend to increase with age. The simulations assume that a 5 percent real interest rate is charged on the loans. Two sets of results are reported. The first set corresponds to simulations under the optimistic assumptions of no repetition, no dropout, no grace period, and no default. This indicates the maximum possible rate of cost recovery for given terms of repayment. The second set of results, in tables 16 and 17, is for simulations under conservative assumptions: only 20 percent of the intake complete their university course on time, while 30 percent repeat one year, 20 percent repeat two years, 20 percent drop out after one year, and 10 percent drop out after two years. It is assumed that all borrowers enjoy a grace period of two years. The default rate is assumed to be 15 percent.

The results for Africa assume that the loan given equals the current public expenditure per student in higher education (table 16). Such a loan would be large enough to cover all tuition and living expenses. The simulations indicate, however, that a loan of this size would probably not be fully re-

Table 17. Student Loans in Latin America and Asia: Percentage of Loan Recovered under Various Repayment Terms, with Optimistic and Conservative Assumptions, around 1980

Region	Repayment (years)	Optimistic assumptions:[a] share of graduates' annual income to repay loan			Conservative assumptions:[b] share of graduates' annual income to repay loan		
		5 Percent	10 Percent	15 Percent	5 Percent	10 Percent	15 Percent
Latin America	10	42	84	126	26	52	78
	15	61	122	183	38	77	115
	20	78	156	234	50	99	149
Asia	10	66	132	197	41	82	123
	15	96	191	287	60	120	181
	20	122	245	368	78	156	233

Note: See table 16 for explanation.

Source: Mingat and Tan (1986b).

couped under relatively easy repayment terms. For example, in Anglophone Africa, if graduates were required annually to allocate 5 percent of their current income for loan repayment over ten years, only 16 percent of the loan would be recovered under optimistic assumptions. In Francophone Africa, these repayment conditions imply a 36 percent rate of cost recovery. Since public expenditures per student in higher education are comparable in these two regions, the more favorable outcome in Francophone Africa mainly reflects the higher salaries graduates in this region receive, as indicated in table 15. Not surprisingly, the performance of the loan schemes worsens under the conservative assumptions. The rate of cost recovery—with the previous terms of 5 percent of current income allocated for repayment over ten years—drops to only 10 percent in Anglophone Africa and to 22 percent in Francophone Africa.

As table 16 indicates, for full recovery under relatively easy repayment terms—say, less than 10 percent of income over ten years—the loan amount would have to be reduced drastically. Students are likely to commit themselves voluntarily to smaller loans if current subsidies are converted to loans since they must then bear the cost of any wastage personally. In some African countries, students' living expenses are estimated to be less than 50 percent of their allowances. Thus, the loan amount needed to finance higher education could be reduced by 25 percent on the assumptions that allowances account for half the total cost and that operating costs remain at current levels. Correspondingly, all the rates of cost recovery reported in table 16 would increase by 33 percent. Given this possibility, student loan schemes look promising as an instrument for cost recovery in African higher education, particularly in Francophone Africa. Students' inability to repay an excessive living allowance argues not against the loan scheme itself but rather for smaller student loans. In Anglophone Africa, the rate of cost recovery would nevertheless remain low. To improve it, complementary policies to reduce the operating cost of higher education, and thereby the size of loans to cover tuition, should be considered.

The simulation results for Latin America and Asia show that a substantial part of the current subsidies can be recovered through loans while keeping the repayment burden relatively low (table 17). (They are reported separately to emphasize that in these regions public expenditures cover the operating costs of higher education but *not* students' living expenses.) In Asia, nearly all costs would be recovered if graduates were to allocate annually 5 percent of their current income toward loan repayment over fifteen years under the optimistic assumptions. In Latin America, these terms would enable governments to recover about 60 percent of the subsidies. As before, the rates of recovery would be lower if allowances are made for repetition, dropout, grace period, and default. The simulations show that the rates would nevertheless remain substantial.

Under an ideal loan scheme, students should be allowed to borrow to finance both tuition charges (which are set to cover full operating costs) and their living costs. In fact, in Asia and to a lesser extent in Latin America, graduates could probably repay a loan that covers more than full tuition costs, as assumed in the calculations in table 17. For example, under the conservative assumptions, if Asian graduates annually allocated 10 percent of their income for fifteen years after graduation, they could finance all tuition charges as well as living expenses amounting to 20 percent of the tuition charges—and more with somewhat stiffer terms. But is it politically and administratively feasible to implement the repayment terms needed to recoup the larger loan? Where such considerations pose no problems, and where the simulations in table 17 show a cost-recovery rate exceeding 100 percent, the loan amount could be increased accordingly to enable students to meet at least some of their living expenses. Providing larger loans would further widen poorer students' access to higher education.

Additional Effects of Student Loans on Efficiency and Equity

Apart from increased cost recovery, loan schemes have other positive effects. Competition for places in higher education would no longer be limited to applicants who can pay at the time of enrollment. Since a larger number of highly motivated students would be able to compete for places, a better selection of students for higher education is likely to result. One study (Piñera and Selowsky 1981) shows that by enabling qualified students from

poor families to enter higher education, a well-functioning loan scheme can generate substantial efficiency gains, though the size of such gains varies by country. Another study—of Argentina, Colombia, and Panama (Herrick and others 1974)—finds that students with loans are more likely to complete their studies successfully, and in the minimum time, than are nonborrowers.

Loan schemes may also incorporate incentives by allowing students who complete their studies on time or who attain high levels of achievement to write off part of their debt. In other words, for selected students part of the loan is converted to a grant. Such incentives have recently been introduced in Germany. In Barbados, the government plans to introduce a loan-grant program to replace the current scholarship program (see box 9). Numerous countries have experimented with incentives to encourage students to choose certain occupations or subjects of study. Encouraging loan recipients to become teachers (say, by writing off part of their student debt) may be more efficient than generally increasing teacher salaries, which would entail substantial extra costs throughout the education system.

A system of loans is also much more equitable than the unselective subsidies that many developing countries now use since under a loan system those who derive substantial returns from their education are required to help pay for it, as demonstrated in analyses of loan schemes in Kenya (Rogers 1972; Fields 1974) and Nigeria (Mbanefoh 1980). In addition, loan schemes can incorporate special features that further promote equity. For example, in Honduras, the interest charged on loans varies with a graduate's income, an arrangement that alleviates the hardship faced by those who are temporarily unemployed or who fail to obtain high-paying jobs. In general, a loan scheme can ensure that poor students who anticipate benefits but lack current means to pay fees or living expenses are not excluded. Such a scheme gives families or students access to finance when needed and enables them to repay the debt when they can afford it.

Selective Scholarships

Loan schemes can help students to finance the private cost of higher education. But they cannot entirely replace scholarships as a source of financial aid, especially for qualified students from very poor families.

Scholarship programs remain important because they ease the transition to greater cost recovery in higher education. But their design necessarily varies from country to country. When the increase in fees is steep and rapid, and when loan schemes have not started, it would be appropriate initially to avoid overly restrictive criteria for selecting scholarship recipients. But greater selectivity might be called for if the fee increase is modest and implemented gradually, if loans for education are easy to obtain, and if most students in higher education come from wealthy families.

Scholarships are also desirable for influencing individual decisions to invest in education. Even in countries where loan schemes are well established, some people might be unable to obtain credit—not because they lack academic potential but because they are considered high-risk borrowers. Such persons tend to come from the poorest families. And being generally more risk-averse than people from wealthier families, they are less likely to borrow for education, even if loans are available. By reducing some of the risk, scholarships can provide the incentive the poorest families need to apply for higher education. Improved efficiency in student selection results since a larger pool of candidates is able to compete for admission.

Selectivity—based on economic need and merit—is an indispensable feature of all scholarship schemes. It is important because providing more scholarships in higher education diverts resources from, say, primary education, where the social returns might be higher. In addition, although scholarships can improve equity in higher education, they do so at the cost of fewer resources for lower levels of education and, therefore, less improvement in equity in the education system as a whole.

Selectivity is not always easy to put in practice, however. For example, determining eligibility for selective scholarships based on financial need is difficult without accurate income data. But other, simpler ways of identifying the needy could be used, depending on the local context. Eligibility for scholarships could be restricted, say, to groups broadly defined by geographic region, parents' oc-

cupation, and eligibility for other forms of government aid.

Decentralized Education through Private and Community Schools

Most schools in developing countries are owned, administered, and financed by central governments. Private and locally run schools are tightly controlled and sometimes even prohibited. Although monitoring, inspection, or accreditation may be needed to expose fraudulent institutions and ensure that schools promote national unity, unnecessarily high or rigid standards inhibit the decentralization of educational services—an unfortunate result since decentralization allows more local resources to be mobilized for education.

Easing Restrictions on Private and Locally Run Schools

Restrictions on schools could be eased in several ways such as lifting outright prohibitions (where they exist) and allowing private and local schools greater freedom in setting fees, selecting curricula, and hiring teachers. In many countries today, national policies or the state constitution prohibits private schools and universities. For example, Congo, Ethiopia, and Nigeria have abolished or have attempted to ban private schools through legislative action (Cowen and McLean 1984).

A more common restriction on private schools is the imposition of norms regarding fees, the hiring of teachers, teachers' qualifications and salaries, curriculum content, and student selection. Such regulations can stifle private education; the key is the degree of regulation. In Cameroon, Chile, and Colombia, for example, the governments determine the fees charged by private schools (Schiefelbein 1985). Other countries, such as Jordan and Zambia, have simply declared that all primary education must be free. In some countries, restrictions apply not only to schools owned by individuals or religious institutions but also to those operated by community groups—parents, neighborhood associations, occupational guilds, or even entire local political subdivisions, such as villages or districts.

Such constraints often prevent private and local schools from responding adequately to their constituents' changing needs. As a result, not enough school places are offered, and the type and quality of education may not be what parents and students want. To counteract this inefficiency, central authorities could loosen (but not necessarily give up) their administrative and financial control over educational systems. Schools would then be accountable to both central authorities and local groups, including parents, villages, neighborhood associations, and other forms of local government.

Community-run schools could be organized and administered by recognized local governments. These bodies should also be given the freedom to mobilize additional resources through fees and local levies. Without this latitude, they would depend too heavily on the federal government for financial assistance. The central government can become a financial catalyst, allocating financial assistance as a reward for local fundraising.

Another important consideration in allocating central government assistance is its impact on equity. In a decentralized system, the distribution of educational services could reflect the ability of localities to generate resources. Since this ability varies, central authorities could grant compensating subsidies to reduce the disparity between rich and poor communities. To ensure that rich communities still have some incentive to generate their own resources, these transfers could be coupled with some matching grants.

The reforms suggested here are feasible. In Pakistan, for example, private schools are once again being allowed to operate, thus reversing the comprehensive nationalization of educational institutions in 1971 (box 10). A privately endowed university for science and technology is being established; it will have complete freedom to determine the content and duration of studies, the criteria for student admission, the salary and qualification of teachers, and the tuition fee. In China, after decades of state control, private language and tutoring schools have recently been allowed to open. China has also announced plans to decentralize the public school system further. In Brazil, India, Mexico, and Nigeria, the responsibility for financing primary and most secondary education has already been delegated to state and local governments, though major reforms are needed to give the lower tiers of government fiscal authority commensurate with their responsibility (Mahar and Dillinger 1983; Tilak 1984).

In some African countries, community schools are not considered a part of the public system, although they are an important vehicle of decentralization. An example is Kenya's *harambee* schools, in which a large proportion of secondary school students are enrolled. In such schools, private assistance is mobilized through cash and labor contributions to cover operating costs and school construction (box 11). Another example is the *ujàmaa* decentralization movement of Tanzania, which allows communities considerable control, although the national government still plays a predominant role as administrator and financier of teachers' salaries. Other examples are more limited pilot projects: the Philippines' barrio high schools, in which vocational students and their parents are assigned tasks to generate revenue; the Mothers' Clubs of Korea; and the Builders' Brigades of Botswana, in which technical students learn as they do contracted jobs in the community (Kulakow and others 1978). These isolated efforts indicate that more systematic and widespread applications of community-based financing of education are feasible and worth exploring.

The policy options considered here suggest a need to relax, not abrogate, central government authority. First, for newly emerging nations where national unity is still fragile, fairly rigid standards regarding curricula may be needed. Second, decentralization, whether through private, community, or local public schools, will give parents and students a greater role in choosing the quality and type of education they want and the means of delivery. To choose wisely, they must have information about educational alternatives. An important role for the central authorities would be to provide this information. They could, for example, display the results of common systemwide examinations or withhold accreditation for noncomplying schools (without necessarily prohibiting their operation). In secondary and higher education, it may be useful to provide the results of tracer studies across schools to show what types of jobs graduates obtain.

Box 10. Policy Reforms Have Begun in Pakistan

The following extracts from Pakistan's sixth five-year plan (1983–88) highlight proposals to reform the country's education system:

"Three main issues have a major bearing on the Sixth Plan education program. One of them, which mainly applies to basic education, is involvement of local bodies in planning, management and maintenance of educational facilities.

. . .

"The second basic issue is of user charges which applies to all levels of education but especially higher education. It is intended to recover a sizeable part of the costs of education through the introduction or enhancement of fees. The Scholarship program will be expanded so that no underprivileged students are kept out of schools, and the meritorious out of colleges and universities, for want of finances.

. . .

"The third issue is that of the role of the private sector. It is proposed to return the existing schools to the original owners wherever it can be ensured that the quality and coverage will not suffer as a result.

. . .

"Special monetary and nonmonetary measures will be adopted to motivate and encourage the private sector to participate fully in the development of education facilities, and funds have been earmarked for extending grants-in-aid for supporting private effort in establishing educational facilities."

Since the government of Pakistan decided to lift the ban on private education, private institutions are booming again. For example, "a group of Lahore mothers, tired of the poor education their children were receiving, decided to start their own school. Today, the school is one of the most sought after in the city" (*Far Eastern Economic Review*, April 12, 1985). The school's financial viability and the demand for places demonstrate that parents are willing to pay for the kind of education they want for their children.

Box 11. Nontraditional Methods of Cost Recovery Can Be Used

The lack of a monetized economy need not be a barrier to mobilizing private resources for education: users can pay for educational services in kind. In the Plateau Province of Nigeria, for example, school principals accept foodstuffs from parents who cannot pay their children's fees in cash (*New Nigerian*, February 6, 1985). In other African countries, communities contribute labor to cover capital and, in some instances, the recurrent costs of running schools.

Community participation in education is exemplified in Kenya's *harambee* (or self-help) schools. In 1981–82, about 20 percent (more than 82,000) of all secondary school students went to harambee schools that received no government aid; another 20 percent went to harambee schools that did. Public subsidies to aided schools covered only about 18 percent of the unit costs of educating a student (Bertrand and Griffin 1984, p. 42). Some 40 percent of secondary students went to harambee schools that accepted not only cash to cover operating costs but also local materials and voluntary labor for building the school. After initial reservations, policymakers have begun to rely on harambee schools—whose activities range from erecting, staffing, and maintaining primary and secondary schools to establishing postsecondary institutes of science and technology—to complement government-run institutions (Keller 1983). A committee of members of the local community manages the school and determines the type of support parents will give, sometimes imposing monetary fines in lieu of labor. The committee also keeps the parents informed about school affairs (Roth 1984, p. 34). In an isolated part of the Nyeri district, for instance, 4,000 residents contributed their labor to build the Kenyatta High School in 1965. The cost of materials was kept to about half the normal costs of a government school by using simple design and local resources (Roth 1984, p. 42).

Other innovative financing schemes are based on income-generating activities by students and their families. In many elementary schools in Africa, students maintain income-earning farms. In one Rwandan school that has only one plot, eight- and nine-year-old students were able to grow $120 worth of potatoes—six times what the school received in government grants—and use the profits to purchase equipment (Kulakow and others 1978, p. 15).

Although many of these examples represent pilot projects, they do indicate families' willingness to pay for education in whatever "coin" they possess.

Subsidizing Students and Their Families Directly

As discussed, public subsidies are commonly channeled through schools. Although most subsidies go directly to public schools, some countries (mostly in Anglophone Africa) channel a small portion to private or locally financed schools (box 12). Most such subsidies are uniformly distributed according to preset funding formulas that do not provide incentives for schools to use inputs efficiently or for the most qualified children to seek enrollment.

Alternatively, education subsidies could be given directly to students and their families on the basis of individual need and merit. Grant recipients should then be allowed to attend the school or institution of their choice. This approach would increase parental choice and institutional accountability by encouraging schools to compete for students. It would probably improve the efficiency in the education system. In practice, however, such a scheme may not be feasible in most developing countries because, aside from other considerations, its administrative costs would probably be high. A more modest approach along these lines would be to distribute subsidies according to the economic need of localities or neighborhood groups. For example, rural communities could be more heavily subsidized than urban neighborhoods. Local authorities could then provide the educational services that their constituents demanded, through a combination of centrally provided subsidies and local levies (monetary and nonmonetary).

Subsidies are distributed along these lines in Brazil (Mahar and Dillinger 1983). The same approach has evolved since the mid-1970s in Chile's

Box 12. Public Subsidies Aid Private and Local Schools

In some developing countries, private schools are subsidized to varying extents. In Africa, a significant proportion of private schools receive government assistance. During 1980–81, 9 percent of Kenya's total public budget for secondary education assisted private harambee schools built by local communities through self-help (see box 11). Schools assisted by the Kenyan government account for 35 percent of total private school enrollment (Bertrand and Griffin 1984, pp. 18–19). In Lesotho, churches own and operate 97 percent of the primary and 86 percent of the secondary schools, though the government administers examinations, reviews and authorizes curricula, opens and closes schools, inspects the operation of all schools, and trains, appoints, and pays teachers. A similar system operates in Mauritius. In Tanzania, the government recently made private schools eligible for subventions from district and town councils. Although such schools are required to follow government guidelines on student admission, the government will not take over or manage them (Government of Tanzania 1984).

In Asia and Latin America, state assistance for private schools is less prevalent. In the Philippines, for example, donations and grants cover only 1 percent of all revenues received by private schools; the rest comes from tuition fees. In Bolivia, Colombia, Mexico, Peru, and Venezuela, state subsidies are small, and only some special schools receive them (Munoz and Hernandez 1978). Nevertheless, some Latin American and Asian governments have begun to transfer more funds to private schools rather than expand public schools. For instance, in 1983 Chile set aside 20 percent of the public educational budget for primary and secondary schools to be used in private institutions. Indonesia is considering a program to expand enrollment by subsidizing private schools.

primary and secondary educational systems. The administration and control of almost all the primary schools outside metropolitan Santiago were transferred to the local municipalities. The central government pays the municipalities a sum (calculated to cover personnel and running costs) for each regularly attending student. The poorest regions receive up to twice as much as the richest, and secondary schools 50 percent more than primary. In addition, Chilean municipalities are allowed to delegate school management to private organizations, subject to central government inspection.

Another option for targeting subsidies to poor students is through cross-subsidization within private schools. In Latin America, especially Colombia, governments pressure private schools to provide free schooling for a limited number of low-income students. In some Latin American countries, between 5 and 10 percent of private secondary students attend free (Schiefelbein 1985). Clearly, however, private scholarships cannot be expanded indefinitely in this manner.

Increasing Competition among Schools

As mentioned, easing restrictions on private and community school operations, as well as channeling subsidies through parents and students, increases competition among schools. In turn, competition increases the numbers of educational services, lowers costs, and gives parents or students a wider choice of schools. Increased competition within the system means higher efficiency through greater managerial accountability.

Rigorous comparisons of the relative efficiency of public and private schools are difficult to make because quality is variable. But studies do show that in Chile, for example, students in private schools achieve more academically than those in state schools after differences in socioeconomic background are taken into account (box 13). Similar results have been obtained in Bolivia and Paraguay, where students in private schools attain higher levels of achievement relative to public school students, even though private enrollees cost less per student to educate (table 18).

Box 13. Private Schools Can Be Good Schools

Drastic reforms in Chilean education in the mid-1970s led to the privatization and decentralization of school administration. Four types of schools are in operation:

- Private fee-paying schools, which recoup all their expenses from tuition fees
- Public schools, in which teachers' salaries and other expenses are paid directly by the Ministry of Education
- Municipal schools, which receive a state subsidy based on student attendance to cover all their costs and whose headmasters are appointed by the local authority
- Private, subsidized schools, whose headmasters are chosen by the school board.

In national examinations in 1982, private school students in Chile scored higher than those of similar background attending other schools. And where the headmaster has some power to distribute the subsidies received (as in private subsidized schools), student achievement was at least as high as in municipal schools.

Box Table 13. Index of Student Achievement in Mathematics, by Type of School and Socioeconomic Background, Chile, 1982

Region and socioeconomic status	*Mean scores*			
	Private fee-paying	*Public*	*Municipal subsidized*	*Private subsidized*
Metropolitan Santiago				
High	77.3	75.9	64.7	64.3
Middle	71.2	53.4	53.5	57.0
Low	—	50.0	49.5	51.8
Rest of the country				
High	75.5	61.5	61.8	69.7
Middle	71.0	52.6	53.7	57.9
Low	—	47.9	45.6	44.8

— Not available.
Source: Schiefelbein (1985), table 31.

Another issue bearing on private school expansion is whether it adversely affects equity or promotes elitism. If supplemented by selective scholarship schemes, the policy options advocated here are likely to mitigate such adverse effects. In Peru, private school fees for primary and secondary education are sometimes as high as US$485 a year. Not surprisingly, most students who attend are from wealthier families. But poorer students stand a chance of obtaining admission since a limited number of scholarships are available on the basis of economic need and academic potential.

Table 18. Cost-Effectiveness of Private and Public Schools in Bolivia and Paraguay
(Index: public = 100)

Country and school type	*Unit cost*	*Achievement*	
		Reading	*Science*
Bolivia			
Public	100	100	100
Private	89	121	130
Paraguay			
Public	100	100	100
Private	74	121	106

Source: Based on Jimenez (1986), table A4.8.

Effects of the Policy Package

How do the reforms outlined here complement each other? As the table in chapter 1 showed,

- Charging tuition for higher education without reinvesting the revenue in education improves student selection and equity and encourages the enrollment of more talented and motivated students. If governments spend this revenue neutrally on all income groups, equity is also furthered.
- If the revenue from higher tuition is spent on education proportionally across all levels of schooling, these policy reforms increase the total amount of resources flowing to education but do not improve allocation across educational levels or efficiency within schools.
- Spending this revenue on the lower levels of education, particularly on primary education, yields added positive effects. First, the total resources going to education increase if public expenditure on primary education mobilizes supple-

Box 14. Cost-Recovery Reforms Are Already Afoot

Despite political obstacles, several countries have begun to reduce subsidies for secondary and higher education.

Barbados

Until 1983, graduate teachers in Barbados could qualify for training in the teacher training college after one year's teaching and receive a full salary and free tuition while doing so. Today, free tuition and full salary for trainee teachers are being replaced by student loans. All trainees are expected to repay their loans out of the considerably higher earnings they will receive as qualified teachers.

China

China's government recently announced a gradual reduction in educational grants and subsidies for university students. Those who have the means are now required to pay their own way. Others will begin to pay a nominal fee and some of their expenses. Academic performance will be an important criterion in awarding scholarships to students in higher education (*Washington Post*, May 30, 1985).

These reforms closely follow earlier decisions by the Chinese government to lift restrictions on the operation of private schools. In Beijing and provincial cities, private schools offer courses in such diverse subjects as tailoring, foreign languages, typing, chicken raising, art, and drama. Typically, the fee collected from a class of about thirty students can support a private teacher. Unlike their counterparts in the public school system, graduates from private schools are not guaranteed a job at the end of study. Yet "some parents prefer to send their children to a private school because, having paid their fees, the pupils observe better discipline" (*Times*, London, January 3, 1983).

Ghana

In 1971, Ghana's government began to charge university students for room and board. Those unable to afford the fees could seek student loans. The subsidy provided to each university student that year was 3,000 cedis, compared with only 20 cedis for each primary school pupil. Under the proposed loan scheme, annual repayments would amount to only 20 percent of the additional income of university graduates. Despite initial opposition from students, university enrollment held steady once the loan scheme was instituted. The experiment was abandoned by a new government, although the National Education Commission recently recommended reintroducing the student loan scheme. Also, students will soon be charged for room and board.

India

India's five-year plan for 1985–90 states, "The new approach to education will require substantial outlays . . . Mobilization of community resources . . . are essential together with accountability at the local level . . . The level of subsidies for secondary and higher education courses will need to be considerably reduced" (Government of India 1984, p. 26).

Malawi

Secondary school fees in Malawi were increased by 50 percent in 1982 without significantly increasing the dropout rate. The government is considering fees for higher education, and further increases in secondary fees.

Morocco

In 1983, Morocco's government announced that university stipends (worth 880 dirhams [Dh] [US$125] per month for the first two years and Dh1,400 [US$198] per month for the third) would be cut by half, except for students from very poor homes. Students in teachers' education courses also had their *presalaire* of Dh1,030 (US$146) per month cut by half.

Nigeria

Nigeria's government recently announced a reduction in subsidies for student accommodation and board in universities (*West Africa*, September 3, 1985). It has also begun to decentralize the fi-

nancing of education. In Ondo State, for example, the local government plans to charge higher fees at all levels of education. Primary schools would retain 20 percent of the funds collected and secondary schools, 50 percent, for their own use. Third-level institutions in Ondo would also be "free to charge levies according to their need to supplement the efforts of the government" (*Daily Sketch*, March 29, 1985).

Solomon Islands

During the October 1984 election campaign in the Solomon Islands, one political party advocated abolishing fees, but many citizens countered that their concern was not free education but rather increased educational opportunity and quality. Apparently, some parents are prepared to bear a greater share of total educational costs if their contribution can be clearly linked to the improvement of education.

Tanzania

In 1981, only 3 percent of all age-eligible children in Tanzania had places in secondary schools, compared with 100 percent in primary school. The government recently decided to expand secondary school places to absorb at least 15 percent of the primary school leavers (Government of Tanzania 1984). At the same time, the government has decided that in view of rising costs and budgetary constraints, the "parents of pupils attending secondary schools will now be required to contribute towards part of the cost of their children's education" (p. 17). In 1985, annual fees were set at Sh1,600 (about US$93)—about what a clerk earns in two months.

mentary private resources. Second, resource allocation across schooling levels improves if returns at the lower levels are higher. Third, equity improves if the additional primary school children to be enrolled come from lower-income groups than the average student at higher and secondary levels.

- Introducing loans and selective scholarships for higher education adds benefits on almost all counts. Such loans mobilize additional resources for higher education and improve resource allocation if resources flow to the courses of study with the highest returns. And together with selective scholarships, they improve student selection and equity by allowing talented students from poor families to compete for places in higher education.
- Decentralizing education and encouraging community and private schools mobilize additional resources for education from families and other local sources. Even more important, this policy increases efficiency in schools by increasing competition among public schools and between private and public schools.

Policy Implementation

The policy package considered here can have substantial beneficial effects in both the short run and

Table 19. Possible Phasing of Policy Reforms

Phase 1

- Reduce allowances for living expenses for higher education.
- Introduce a low level of cost recovery in higher education with exemptions for low-income students.
- Relax legal restrictions on the operation of private schools.

Phase 2

- Restrict eligibility for allowances strictly to needy students.
- Increase cost recovery in higher education and introduce cost recovery in secondary schools, with selective exemptions and grants to low-income students.
- Introduce student loans with below-market interest rates, with grants and special terms for low-income students.
- Promote decentralization in the management and financing of public schools in federal systems.

Phase 3

- Make the operation of student loan schemes self-financed, while maintaining grants to qualified students from low-income families.
- Encourage greater competition between public and private schools by channeling resources to them through students.
- Promote decentralization in nonfederal systems.

the long run. But its implementation will not be easy, at least in some countries, for three main reasons. First, the suggested policies go against a long-established tradition of free education. Second, some of the policies may conflict with a country's political regime. Third, the institutional limitations may complicate the administration of some of the proposed policies, such as launching a student loan scheme.

Despite the apparent difficulty of some of these policy options, reforms of this style are already taking place. In countries such as China, India, and Tanzania, which have traditionally espoused centrally planned and heavily subsidized educational systems, the government has adopted, or is considering, policy reforms in the spirit of the advocated options (box 14). These examples suggest that implementing the policy options discussed here is increasingly feasible and realistic in a wide range of socioeconomic systems.

To facilitate the political and especially the institutional aspects of implementation, the policy package could be phased, with top priority given to policy reforms with the lowest administrative and political costs. Although the exact phasing of the reforms will differ from country to country, table 19 illustrates one possible ordering.

The sequence and timing of steps would vary from country to country. Moreover, in some countries the entire package of proposed policies is unlikely to be fully implemented. For example, full recovery of student loans is unlikely for several reasons: default, dropout, repetition, temporary unemployment, and unexpectedly low earnngs of graduates. But even if recovery were only partial, these policies would probably result in a significant improvement over the present situation, in which students in higher education contribute little or nothing to the public cost of their education. Moving in the right direction—by beginning to reform the financing of education—is better than continuing the existing situation in most countries. If the efficiency and equity gains from the policy reforms are large enough, governments can find ways to overcome political opposition and implement the package most appropriate to the country's conditions.

4 / Need for Further Analysis

The findings presented in previous chapters are based on a substantial body of research. Additional analytical work is nevertheless needed to assess the potential effectiveness and impact of the suggested policies in particular countries.

Evidence that such analysis is already taking place is reflected in the new focus on cost-recovery issues in the education sector work of the World Bank. For example, a 1983 study in Burkina Faso concludes with recommendations for reducing stipends to postprimary students and calls for changes in the subsidy system for private schools. Another study covering nineteen Eastern African countries points out that "in virtually every country surveyed it is possible to envisage mobilization of additional community, student and parents' financial resources for secondary schools . . . In most countries the cost of boarding could be shifted to students. . . . In other cases students could be asked to pay the full cost of textbooks [and] other expendable materials [used] in their studies" (Wolff 1984, p. 23). Sector work on financing issues has also been completed for Malawi and Lesotho. In the latter, the Bank's report recommends reforming the loan program for university students to improve cost recovery in higher education. In countries such as the Comoros Islands, Kenya, Liberia, Malawi, Mali, Nigeria, Senegal, and Zambia, cost recovery and financing issues are a major topic of the Bank and the country in discussions of future lending programs. (Educational financing was also the topic of two higher-level policy seminars that the Bank's Economic Development Institute held in Africa in 1985.)

In Asia, too, the issue of finance has been an important subject of sector work. One study of equity in Indonesian education concludes that "an increase in fees at the secondary and university levels . . . has the potential to improve equity by reducing subsidies to upper income students while also raising revenues" (Meesook 1984, p. 31). It further suggests that the private sector should be encouraged to provide educational services. The findings of more recent additional studies are being used to prepare a project for developing private higher education in Indonesia. Similarly, in Bangladesh, China, the Republic of Korea, Pakistan, and Solomon Islands, the financing of education is being studied. The China sector study, which recommends that the Chinese government consider the increased private financing and provision of education, provided grist for recent discussions among senior Chinese government officials on the future of Chinese education. In Korea, the Bank has recommended encouraging private postprimary education by easing quotas that restrict private school enrollment and lifting restrictions on fees.

These examples illustrate the kind of analysis needed to devise cost-recovery policies that are appropriate to local conditions in each country. Examination of the following questions would be especially helpful:

- What are the major sources of inefficiency in the current system of providing and financing of education?
- How socially equitable are the present financing arrangements?
- How can costs be recovered at each level of education? How willing are parents and students to pay? What is the likely magnitude of the extra revenue?

• How can alternative financing arrangements improve efficiency and equity?

For each country, the extent and causes of inefficiency should be identified. For example, if unit costs in public education are higher than those in private education, governments should find out why. The main cause could be a lack of accountability and financial incentives, or it could be that teachers' remuneration is too high. If teachers are receiving wages above market levels, the way that salary policy affects the supply of funds for other pedagogical inputs could be addressed.

The issue of who bears the cost and who benefits from education should also be considered. This could be done by comparing the socioeconomic profile of the general population that pays taxes with the profile of those enrolled at different levels and in different types of education. Such background analysis could help alter financing arrangements that are inefficient or inequitable.

Of course, the possibilities for cost recovery depend on each country's specific circumstances. In some countries, operating private schools might be unconstitutional or against national policies; even so, such countries should know how much this prohibition costs them in forgone revenues. In other countries, the amount of excess demand and users' willingness to pay for educational services could be assessed. Analytical work of this kind could show how and to what degree alternative financing arrangements contribute to a series of socioeconomic indicators. Or the expected benefits of the policy package proposed in this study could be approximated for each country case as in table 1.

The role and impact of student loans in particular countries also need further consideration. In some countries, such as in Latin America, loan schemes are already quite widespread. Research in those countries could focus on ways to improve the performance of the schemes so that default rates and collection costs are minimized. The impact of student loans on student selection could also be examined. In other countries, such as in Africa, loan schemes are not common. In such countries, studies are needed to evaluate the benefit and feasibility of introducing loan schemes. The terms of repayment appropriate to each country's socioeconomic conditions should also be examined.

Further work is needed on the role of private schools in contributing to educational development in different country settings. One concern is the question of how and to what extent the government should exercise control over private schools. Other issues include: Should the government encourage the expansion of private schools? How can this be accomplished? What would be the impact of such expansion on social selectivity in education? Is a voucher scheme desirable? Under such a scheme, would the efficiency of schools improve because of the anticipated increase in competition between schools? Would equity in the access to education be enhanced?

Appendix Tables

Appendix Table 1. National Income, Public Educational Expenditure, and Population Growth, 1965–80
(percent)

Region and country	Annual growth rate								
	National income			Educational expenditure			School-age population		
	1965–70	1970–75	1975–80	1965–70	1970–75	1975–80	1965–70	1970–75	1975–80
Developing countries	5.1	5.1	5.1	8.7	6.8	6.2	3.0	2.9	2.4
East Africa	4.8	4.5	3.0	11.2	6.8	1.0	3.2	3.1	2.9
Ethiopia	4.0	2.9	3.3	23.2	6.3	0.6	2.6	2.7	1.1
Kenya	5.4	9.7	5.8	7.7	14.9	6.5	3.8	4.2	4.4
Malawi	4.9	8.1	4.2	10.1	−4.3	5.0	3.1	3.1	1.8
Rwanda	8.7	5.2	4.3	—	5.2	7.7	2.9	3.6	4.0
Somalia	4.0	3.3	4.1	—	18.7	1.9	3.7	2.3	2.0
Sudan	0.3	3.4	6.6	7.9	10.8	3.3	2.4	3.2	3.2
Tanzania	6.7	4.6	4.6	13.5	8.4	6.4	3.0	3.8	3.6
Uganda	5.5	0.0	−4.9	18.3	−8.5	−28.5	3.2	2.8	2.7
Zambia	2.7	2.5	−0.7	−2.2	10.0	−7.9	2.8	3.2	3.3
Zimbabwe	6.8	5.3	2.8	—	6.5	15.3	4.4	2.6	3.3
West Africa	5.1	3.0	4.3	7.2	8.5	6.6	2.9	3.4	3.1
Cameroon	4.8	4.0	8.0	6.7	6.8	4.6	2.7	3.1	3.1
Congo, P.R. of	5.1	8.0	2.7	—	15.1	−0.8	2.7	2.8	4.0
Côte d'Ivoire	7.2	6.4	6.7	5.9	9.6	13.0	3.5	6.0	4.3
Ghana	2.7	0.0	0.5	3.7	6.5	−19.9	2.3	3.2	3.0
Liberia	9.1	1.6	4.7	13.0	0.8	27.0	3.4	3.6	1.9
Niger	−0.6	−2.2	7.9	8.3	11.2	10.6	3.2	3.6	3.4
Sierra Leone	5.2	2.3	1.5	3.3	3.6	4.4	2.0	2.3	2.1
Togo	7.2	4.0	2.0	9.2	14.1	14.4	3.7	2.6	2.6
East Asia and Pacific	8.6	7.2	7.8	7.5	4.3	9.6	3.3	2.2	1.4
China	8.3	5.6	5.9	—	0.0	19.3	3.5	2.0	1.1
Hong Kong	7.9	6.9	12.7	—	8.4	12.7	3.7	1.3	0.7
Indonesia	7.1	7.2	7.5	—	8.7	−1.9	2.6	3.3	2.2
Korea, Rep. of	10.4	8.6	7.3	—	−1.6	21.0	3.2	1.9	0.9
Philippines	4.8	6.5	6.2	4.0	0.0	2.6	3.1	3.0	3.1
Singapore	12.6	9.5	7.7	6.5	8.1	8.4	3.3	0.5	−0.8
Thailand	9.2	6.2	7.0	11.9	6.8	5.1	3.8	3.3	2.7
South Asia	6.0	3.0	4.9	8.1	6.0	8.2	3.3	3.2	2.7
India	4.7	3.0	3.5	6.3	3.0	4.2	2.9	2.7	2.5
Pakistan	7.3	3.5	6.4	10.0	8.9	2.2	3.8	3.8	2.9
Latin America and the Caribbean	5.2	4.6	4.5	6.8	4.2	6.1	3.1	2.7	1.9
Argentina	4.2	3.0	1.7	7.5	−3.7	10.0	1.5	1.3	1.0
Bolivia	3.8	6.0	2.6	8.9	6.6	3.8	2.4	2.8	3.0
Chile	4.7	−2.5	7.6	12.2	−6.7	10.1	2.4	1.7	0.9
Colombia	5.7	6.3	5.7	2.8	8.4	1.5	3.7	2.4	0.5
Costa Rica	7.1	5.8	5.0	7.1	11.6	7.9	4.0	3.0	1.6
Ecuador	4.4	11.4	5.6	11.7	5.5	18.1	3.2	3.0	2.4
El Salvador	4.5	5.4	1.1	−5.6	8.8	3.9	4.2	3.3	3.3
Guatemala	5.5	5.6	6.0	5.5	1.0	9.7	3.4	3.1	2.4
Honduras	4.8	2.2	6.5	7.0	5.9	4.1	3.1	3.8	3.9
Jamaica	4.6	2.8	−4.2	6.4	13.5	−1.1	3.0	3.5	1.5
Mexico	8.0	6.4	6.4	13.2	16.7	1.5	3.9	3.5	2.8
Panama	7.6	5.1	5.5	13.6	5.8	2.8	3.2	2.4	2.6
Paraguay	4.2	7.0	10.4	7.3	−2.2	8.8	2.9	3.0	2.2
Peru	3.7	4.7	1.5	−4.0	5.3	0.3	3.3	3.2	2.2
Trinidad and Tobago	4.1	1.8	6.1	9.0	−4.0	12.0	2.1	1.4	−1.4
Uruguay	4.6	1.4	4.8	4.0	−9.9	6.8	1.0	0.0	0.5
Venezuela	6.2	5.9	3.4	9.7	8.0	3.0	4.7	3.8	2.8

Appendix Table 1 (*continued*)

Region and country	Annual growth rate								
	National income			Educational expenditure			School-age population		
	1965–70	1970–75	1975–80	1965–70	1970–75	1975–80	1965–70	1970–75	1975–80
Europe, Middle East, and North Africa	7.5	7.1	6.7	11.1	11.5	9.4	2.7	2.9	3.0
Algeria	7.8	5.5	6.7	24.4	5.5	7.8	3.4	4.0	3.1
Greece	7.2	5.1	4.4	4.3	5.1	6.4	−0.4	0.6	1.1
Israel	7.6	7.0	1.8	3.7	12.0	6.1	3.2	2.0	1.8
Jordan	—	3.7	13.5	—	2.8	17.8	3.2	2.6	2.7
Libya	15.5	−5.2	9.0	16.6	2.2	−3.2	4.6	4.2	4.4
Morocco	5.4	6.0	5.0	4.2	12.3	10.1	3.0	3.4	2.7
Saudi Arabia	9.2	15.4	11.9	5.1	34.5	−1.3	3.7	4.7	5.0
Spain	6.1	5.6	1.9	15.1	5.6	6.4	1.3	1.2	1.0
Syria	3.7	13.6	5.9	—	14.2	8.5	2.8	4.0	4.1
Tunisia	5.2	9.6	6.6	15.6	3.2	7.1	4.0	2.2	2.5
Yemen Arab Rep.	—	12.2	7.4	—	28.9	37.4	1.4	3.3	4.4
Developed countries	5.0	3.4	2.9	7.8	6.8	3.5	0.7	0.3	0.1
Finland	4.8	3.8	3.0	5.1	5.1	0.3	−0.5	−1.4	−1.5
France	5.3	3.9	3.4	13.3	5.6	2.6	1.6	0.2	−0.2
Ireland	4.5	3.9	3.3	14.3	8.5	5.8	0.9	1.8	1.7
Italy	6.2	2.3	3.9	0.8	4.7	6.1	0.6	0.4	0.4
Japan	11.3	4.7	5.1	—	12.1	6.6	−1.1	−0.9	0.6
Netherlands	5.4	3.0	2.7	8.5	5.5	1.9	1.1	0.3	−0.1
New Zealand	3.1	4.5	−0.4	7.1	8.7	−0.8	2.0	1.5	0.0
Norway	3.8	4.5	4.2	6.4	8.1	8.8	0.7	0.2	0.2
Sweden	4.1	2.7	1.1	8.7	1.1	6.3	0.0	−0.5	0.3
United Kingdom	2.4	2.0	1.6	—	6.9	−1.6	1.4	0.1	0.0
Germany, Fed. Rep. of	4.5	2.1	3.6	6.3	8.8	1.9	1.3	1.9	−0.6

— Not available.
Note: Growth rates of expenditure and GNP are in constant prices. Regional averages include countries with complete data for 1970–80.
Source: Unesco, *Statistical Yearbook*, various issues, and World Bank data.

Appendix Table 2. Share of Public Educational Expenditure in GNP and the Public Budget

Region and country	Year	Total (recurrent and capital)		Recurrent only	
		Percentage of GNP	Percentage of total public spending	Percentage of GNP	Percentage of current public spending
East Africa					
Botswana	1983	7.0	18.5	5.8	23.4
Burundi	1981	3.0	15.6	2.7	20.8
Comoros	1982	5.4	36.0	5.1	40.6
Djibouti	1982	3.9	12.1	—	—
Ethiopia	1982	4.1	11.3	3.1	14.2
Kenya	1983	4.8	15.3	4.6	17.6
Lesotho	1983	3.9	—	3.7	—
Madagascar	1983	2.3	—	2.3	—
Malawi	1983	2.5	8.5	2.3	11.3
Mauritius	1983	4.0	10.3	4.0	12.6
Rwanda	1983	3.1	24.0	3.0	27.7
Seychelles	1982	9.0	21.1	8.1	19.4
Somalia	1983	2.3	6.3	2.0	—
Sudan	1980	4.6	9.1	4.2	12.6
Swaziland	1981	5.2	14.1	4.2	23.0
Tanzania	1983	5.8	15.3	5.1	—
Uganda	1983	1.8	—	1.3	—
Zaire	1980	—	—	5.8	32.3
Zambia	1982	5.6	11.3	5.6	14.0

Appendix Table 2 (*continued*)

Region and country	Year	Total (recurrent and capital)		Recurrent only	
		Percentage of GNP	Percentage of total public spending	Percentage of GNP	Percentage of current public spending
Zimbabwe	1983	—	—	7.6	—
West Africa					
Benin	1980	—	—	5.1	36.8
Burkina Faso	1983	3.2	23.9	3.2	25.3
Cameroon	1983	3.7	17.2	2.9	21.7
Central African Republic	1983	—	—	3.6	26.5
Chad	1975	—	—	2.2	11.9
Congo, P.R. of	1981	6.0	19.2	5.6	25.8
Côte d'Ivoire	1979	8.4	29.8	6.5	39.8
Gabon	1980	3.0	—	2.2	—
Gambia	1981	6.0	—	4.1	—
Ghana	1981	2.4	—	—	—
Guinea	1979	—	—	4.2	—
Liberia	1980	6.3	24.3	5.4	27.0
Mali	1982	4.2	32.2	4.2	—
Mauritania	1983	—	—	8.0	29.7
Niger	1981	—	—	3.7	—
Nigeria	1983	2.1	9.3	1.3	16.2
Senegal	1981	—	—	4.7	—
Sierra Leone	1980	3.8	—	3.6	14.5
Togo	1983	5.9	20.8	5.8	—
East Asia and Pacific					
China	1983	—	—	2.3	—
Indonesia	1981	2.2	9.3	—	—
Korea, Rep. of	1983	5.1	—	3.8	—
Malaysia	1982	7.5	—	5.9	—
Papua New Guinea	1979	4.7	14.2	4.5	—
Philippines	1982	2.0	—	1.6	—
Singapore	1982	4.4	9.6	3.2	10.8
Solomon Islands	1979	3.6	10.6	3.2	15.6
Thailand	1983	3.9	—	3.1	—
South Asia					
Bangladesh	1983	1.9	8.6	1.4	15.4
Burma	1977	1.6	12.2	1.6	14.6
India	1982	3.2	—	—	—
Maldives	1978	0.6	—	0.6	—
Nepal	1982	2.6	—	—	—
Pakistan	1983	2.0	—	1.5	—
Sri Lanka	1983	3.0	7.1	2.7	12.3
Latin America and the Caribbean					
Argentina	1982	2.5	14.5	2.2	18.2
Bahamas	1978	9.8	22.9	8.2	23.4
Barbados	1982	5.7	17.6	4.8	18.0
Bolivia	1982	3.0	25.8	3.0	—
Brazil	1983	3.2	18.4	—	—
Chile	1982	5.8	—	—	—
Colombia	1983	3.0	21.5	2.9	27.7
Costa Rica	1983	6.0	—	5.4	—
Dominican Rep.	1983	2.1	16.0	2.0	19.0
Ecuador	1980	5.6	33.3	5.2	36.0
El Salvador	1982	3.7	8.5	3.6	10.8
Grenada	1983	3.3	—	3.0	—
Guatemala	1983	1.8	12.4	1.7	—
Guyana	1983	9.7	9.6	8.4	11.6
Haiti	1983	1.1	—	1.1	13.6
Honduras	1982	4.3	16.9	4.0	24.0

(*Table continues on the following page.*)

Appendix Table 2 (*continued*)

Region and country	Year	Total (recurrent and capital)		Recurrent only	
		Percentage of GNP	Percentage of total public spending	Percentage of GNP	Percentage of current public spending
Jamaica	1982	—	—	6.8	19.8
Mexico	1983	2.7	6.4	2.6	7.5
Nicaragua	1982	4.0	10.3	3.8	—
Panama	1983	5.5	17.5	5.0	17.7
Paraguay	1979	1.3	12.4	—	—
Peru	1983	3.3	14.7	3.2	17.3
St. Christopher and Nevis	1982	12.1	18.6	—	—
St. Lucia	1982	8.1	—	6.8	—
St. Vincent	1978	4.9	—	4.9	—
Suriname	1983	7.0	—	—	—
Trinidad and Tobago	1983	5.4	12.3	4.3	16.3
Uruguay	1981	2.5	12.8	2.3	13.7
Venezuela	1982	6.5	21.2	6.2	29.3
Europe, Middle East, and North Africa					
Afghanistan	1982	—	6.4	—	6.9
Algeria	1982	4.5	—	4.1	—
Cyprus	1983	3.9	11.9	3.8	13.4
Egypt	1983	4.1	8.9	—	—
Greece	1979	2.2	8.4	2.0	9.6
Iran, Islamic Rep. of	1983	—	15.5	—	18.4
Iraq	1982	—	—	—	8.5
Ireland	1982	7.3	9.7	6.4	11.1
Israel	1981	7.8	6.8	7.2	8.0
Jordan	1983	5.8	12.5	5.2	16.2
Kuwait	1983	3.7	14.1	3.5	15.8
Morocco	1983	7.5	22.0	5.4	27.4
Oman	1981	2.3	4.6	1.9	5.2
Portugal	1981	4.7	—	4.1	—
Saudi Arabia	1983	4.7	10.5	3.5	15.6
Spain	1979	2.6	16.4	2.3	16.7
Syria	1983	5.9	12.1	3.2	13.1
Tunisia	1983	4.5	—	4.1	—
Turkey	1983	3.4	—	2.9	—
United Arab Emirates	1983	1.9	9.8	1.7	9.9
Yemen Arab Rep.	1980	6.6	13.7	4.9	22.3
Yemen, P.D.R.	1982	7.4	—	5.9	—
Yugoslavia	1982	4.3	—	3.8	—
Western industrial countries					
Australia	1981	5.9	14.5	5.4	16.6
Austria	1983	6.0	8.0	5.3	8.7
Belgium	1983	6.2	—	5.9	—
Canada	1983	8.0	—	7.4	—
Denmark	1980	6.9	9.5	6.1	9.0
Finland	1982	5.9	12.8	5.4	14.3
France	1980	5.1	—	4.7	—
Germany, Federal Republic	1982	4.6	—	4.1	—
Iceland	1975	4.1	12.2	—	—
Italy	1979	5.0	11.1	4.4	10.7
Japan	1982	5.7	19.1	3.9	—
Luxembourg	1983	6.4	14.1	6.0	18.8
Netherlands	1982	7.7	—	6.7	—
New Zealand	1983	5.2	—	4.8	—
Norway	1983	7.0	12.9	6.1	14.3
Sweden	1983	8.5	12.5	7.2	—
Switzerland	1982	5.0	18.8	4.4	20.0

Region and country	Year	Total (recurrent and capital)		Recurrent only	
		Percentage of GNP	Percentage of total public spending	Percentage of GNP	Percentage of current public spending
United Kingdom	1982	5.5	11.9	5.2	12.0
United States	1981	6.8	—	—	—
Eastern European industrial countries					
Bulgaria	1983	6.6	—	5.8	—
Czechoslovakia	1983	5.1	—	4.9	—
German Democratic Republic	1982	—	—	5.5	—
Hungary	1983	5.8	6.6	5.2	8.2
Poland	1983	—	—	—	11.2
Romania	1983	2.3	7.5	2.2	—
Soviet Union	1983	6.6	10.2	5.6	—

— Not available.

Note: According to Unesco's 1984 *Statistical Yearbook*, "Public expenditure on education includes, unless otherwise indicated, educational expenditure at every level of administration according to the constitution of the States, i.e., central or federal government, State governments, provincial or regional authorities, local authorities" (p. IV-1).

Source: Unesco, *Statistical Yearbook*, 1985.

Appendix Table 3. Share of Public Educational Expenditure in the Public Budget, 1965–80

Region and country	1965	1970	1975	1980
Africa				
Benin	22.8	—	—	—
Burkina Faso	—	—	—	19.8
Botswana	11.3	12.3	13.9	11.7
Burundi	—	—	—	17.5
Cameroon	18.0	19.6	21.3	20.3
Central African Republic	—	—	20.1	19.9
Chad	17.1	—	—	—
Comoros	—	—	—	36.0
Congo, P.R. of	16.8	23.7	18.2	23.6
Côte d'Ivoire	21.2	19.3	19.0	29.8
Djibouti	—	—	—	11.5
Ethiopia	8.8	19.4	13.4	9.3
Kenya	20.6	17.6	19.4	18.1
Gabon	20.4	16.2	—	—
Gambia	—	10.8	—	9.7
Ghana	17.7	19.6	21.5	—
Lesotho	13.5	—	—	—
Liberia	13.6	9.5	11.6	24.3
Madagascar	—	—	18.5	—
Malawi	15.4	13.2	9.6	12.9
Mali	28.7	—	—	30.5
Mauritania	—	21.9	—	—
Mauritius	11.9	11.5	9.6	11.6
Niger	11.3	17.7	18.7	22.9
Nigeria	—	—	16.5	16.2
Rwanda	23.4	26.6	25.3	21.6
Seychelles	17.8	11.5	9.5	14.4
Somalia	—	7.6	12.5	8.7
Sudan	15.8	12.6	14.8	9.1
Swaziland	15.7	17.3	—	14.1
Senegal	19.6	21.3	—	—
Sierra Leone	17.0	17.5	—	—
Tanzania	23.7	16.0	17.8	10.7
Togo	16.8	19.0	15.1	19.4
Uganda	12.3	17.8	17.0	11.3
Zaire	16.0	—	—	—
Zambia	13.3	10.9	11.9	7.6
Zimbabwe	18.2	—	—	13.7
South Asia, East Asia, and Pacific				
Bangladesh	—	—	13.6	8.2
Burma	14.7	17.9	15.3	12.2
India	17.5	10.7	8.6	10.0
Indonesia	—	—	13.1	8.9
Korea, Rep. of	19.0	21.4	13.9	23.7
Malaysia	—	17.7	19.3	16.4
Nepal	8.2	6.7	11.5	8.3
Pakistan	7.4	4.2	5.2	5.0
Papua New Guinea	14.4	13.2	—	14.2
Philippines	—	24.4	11.4	10.3

(Table continues on the following page.)

Appendix Table 3 (*continued*)

Region and country	*1965*	*1970*	*1975*	*1980*
Singapore	—	11.7	8.6	7.3
Solomon Islands	—	11.7	—	10.6
Sri Lanka	15.0	13.6	10.1	8.8
Thailand	17.4	17.3	21.0	20.6
Latin America and the Caribbean				
Argentina	23.4	16.0	9.5	15.1
Bahamas	14.8	19.4	—	22.9
Barbados	—	21.2	20.9	19.6
Bolivia	24.7	28.4	—	25.3
Brazil	11.9	10.6	—	—
Chile	15.1	22.0	12.0	11.9
Colombia	13.9	13.6	16.4	14.3
Costa Rica	33.1	31.8	31.1	22.2
Dominican Republic	13.5	15.9	14.3	16.0
Ecuador	—	23.2	25.9	33.3
El Salvador	21.9	27.6	22.2	17.1
Grenada	16.0	26.1	12.5	—
Guatemala	15.9	17.5	15.7	16.6
Guyana	14.0	13.2	—	14.0
Haiti	—	—	—	10.7
Honduras	22.8	18.4	20.3	15.0
Jamaica	16.4	—	16.0	13.1
Mexico	7.1	8.5	11.9	16.7
Nicaragua	16.7	18.1	13.1	10.4
Panama	27.2	22.1	21.3	19.0
Paraguay	—	15.3	12.8	12.4
Peru	18.1	18.8	16.6	15.2
St. Christopher and Nevis	—	9.7	—	10.2
St. Lucia	—	—	—	16.8
St. Vincent	16.0	5.8	—	—
Suriname	—	17.9	14.1	25.0
Trinidad and Tobago	14.1	16.0	9.7	9.5
Uruguay	—	26.1	—	10.0
Venezuela	18.0	22.9	—	14.7
Europe, Middle East, and North Africa				
Afghanistan	11.1	—	—	12.7
Algeria	14.8	31.6	—	24.3
Cyprus	15.1	17.4	14.3	12.9
Egypt	—	15.8	—	9.4
Greece	12.2	9.6	8.0	10.1
Iran, Islamic Rep. of	8.2	9.6	14.1	15.7
Iraq	22.9	—	6.9	—
Ireland	14.9	10.8	10.8	11.2
Israel	13.9	8.1	7.6	7.3
Jordan	9.2	9.3	7.7	12.1
Lebanon	14.6	15.5	21.6	—
Morocco	—	16.8	14.3	18.5
Portugal	8.6	6.6	11.2	—
Spain	12.0	15.2	16.8	16.4
Syria	12.4	9.4	7.8	8.1
Tunisia	13.3	23.2	16.4	16.4
Turkey	19.0	13.7	—	10.5
Yemen Arab Republic	5.1	—	10.0	15.1
Yemen, P.D.R.	14.1	—	—	—
Yugoslavia	—	23.3	24.4	32.5
Developed countries				
Australia	11.0	16.0	9.5	15.1
Austria	6.4	8.1	8.5	8.0
Belgium	18.8	—	22.2	16.3
Canada	18.5	24.1	17.8	17.3
Denmark	22.8	16.9	15.2	9.5
Finland	22.5	—	13.0	11.2
France	17.9	—	—	—
Germany, Fed. Rep. of	10.3	9.8	10.6	10.1
Italy	18.4	11.9	9.4	11.1
Japan	22.7	20.4	22.4	19.6
Netherlands	20.5	—	—	—
New Zealand	10.5	—	17.1	14.5
Norway	—	15.5	14.7	16.3
Sweden	14.5	—	13.4	14.1
Switzerland	20.4	18.4	19.4	18.8
United Kingdom	13.4	14.1	14.3	13.9
United States	19.5	19.4	18.1	—

— Not available.
Note: Figures refer to the total of recurrent and capital public expenditure on education.
Source: Unesco, *Statistical Yearbook*, 1974, 1984.

Appendix Table 4. Share of Private Spending in Total National Expenditure on Education, 1970–80
(*percent*)

Region and country	*1970–74*	*1975–80*
Africa		
Ghana	49.2[a]	53.2[a]
Sierra Leone	44.6[a]	47.7[a]
Sudan	15.8	13.7
Tanzania	29.9[a]	23.4[a]
Togo	22.9	—
Zambia	11.1[a]	—
Zimbabwe	54.5	31.3
Asia and Pacific		
Fiji	41.2	23.0
India	73.8	64.2
Kiribati	15.8	—
Korea, Rep. of	88.1	90.6
Malaysia	10.8	—
Papua New Guinea	60.5	—
Sri Lanka	—	25.8
Thailand	71.2[a]	52.9[a]
Latin America and the Caribbean		
Honduras	57.1[a]	51.6[a]
Panama	55.0[a]	52.8[a]
Venezuela	52.3[a]	52.8[a]
Europe, Middle East, and North Africa		
Cyprus	22.2	14.0
Israel	51.8	20.2
Jordan	34.9	34.8
Libya	30.7[a]	—
Malta	50.9[a]	58.7[a]
OECD countries		
Australia	11.6	5.1
Belgium	2.2	1.9
Greece	37.4	26.2
Japan	61.2[a]	56.7[a]
Spain	52.7	51.6
United Kingdom	25.0	21.6
United States	21.6	20.5

—Not available.
Note: Total national expenditure is combined public and private spending. Figures are within period averages.
a. Figures include expenditure on recreation, entertainment, and educational and cultural services.
Source: United Nations, *Yearbook of National Accounts Statistics*, 1981.

Appendix Table 5. Enrollment in Private Schools as Percentage of Total Enrollment, by Country and Level, 1965–79

Region and country	Primary				Secondary			
	1965	1970	1975	1979	1965	1970	1975	1979
Asia								
Bangladesh	—	—	8	—	—	—	9	—
Indonesia	12	—	13	12	—	—	60	47
Korea, Rep. of	1	—	1	1	48	—	45	5
Philippines	4	—	5	—	66	—	38	—
Singapore	40	—	35	—	3	—	1	—
Sri Lanka	—	—	6	—	9	—	—	—
Thailand	13	—	11	8	50	—	32	27
East Africa								
Botswana	4	5	5	2	10	59	30	27
Burundi	96	94	92	100	30	36	22	—
Djibouti	—	23	13	9	—	—	—	—
Ethiopia	25	28	25	18	15	—	—	—
Kenya	4	—	1	—	29	42	49	60
Lesotho	96	100	100	100	100	89	89	90
Madagascar	27	20	23	—	66	70	49	—
Malawi	77	11	10	10	5	13	13	13
Mauritius	—	—	—	—	—	—	—	82
Seychelles	—	91	8	3	—	18	4	4
Sudan	2	4	2	—	45	—	13	3
Swaziland	80	76	80	80	4	—	—	—
Tanzania	7	2	4	0.4	—	24	29	41
Rwanda	—	—	—	—	—	—	21	—
Zaire	91	—	—	—	57	—	—	—
Zambia	—	27	24	—	4	—	2	—
Zimbabwe	—	—	—	83	—	—	—	66
West Africa								
Benin	40	33	5	4	54	56	18	4
Cameroon	61	54	43	36	73	66	57	48
Central African Rep.	—	—	—	—	2	—	2	—
Chad	12	8	10	5	7	7	6	—
Côte d'Ivoire	28	22	19	16	—	25	28	30
Equatorial Guinea	—	—	24	—	—	3	3	—
Gabon	53	—	45	—	43	39	32	44
Gambia	—	31	16	16	54	46	46	34
Liberia	25	34	35	36	48	38	43	44
Mali	8	6	4	4	10	11	11	—
Mauritania	34	29	28	25	77	—	6	—
Niger	6	6	5	5	2	22	14	16
Nigeria	76	38	26	—	—	—	41	—
Senegal	13	12	12	12	22	—	25	33
Sierra Leone	—	—	78	—	—	—	87	—
Togo	40	34	29	25	55	39	16	10
Burkina Faso	34	—	7	—	38	36	43	54
Europe, Middle East, and North Africa								
Algeria	2	2	1	0.2	7	0.5	1	1
Cyprus	1	—	—	—	11	—	13	—
Egypt	13	—	5	5	41	22	22	14
Iran, Islamic Rep. of	8	—	8	—	26	—	17	—
Iraq	2	—	1	—	24	—	—	—
Jordan	28	—	30	8	13	—	7	5
Libya	3	0.5	2	—	7	0.4	0	0.6
Morocco	6	5	5	3	14	10	8	6
Saudi Arabia	6	—	3	—	4	—	2	—
Syria	10	—	5	—	37	—	6	—
Turkey	1	—	—	—	—	—	2	—
Yemen Arab Rep.	—	—	1	—	—	—	3	—

Region and country	Primary				Secondary			
	1965	1970	1975	1979	1965	1970	1975	1979
Latin America and Caribbean								
Argentina	14	—	17	—	41	—	45	—
Barbados	—	—	9	—	26	—	21	—
Bolivia	26	—	9	—	26	—	24	—
Brazil	11	—	13	—	49	—	25	—
Chile	27	—	18	—	38	—	23	—
Colombia	14	—	15	—	58	—	38	—
Costa Rica	4	—	4	—	24	—	6	—
Dominican Rep.	7	—	12	—	—	—	—	—
Ecuador	18	—	17	—	38	—	30	—
El Salvador	4	—	6	—	47	—	47	—
Guatemala	19	—	14	—	54	—	43	—
Haiti	26	—	42	—	43	—	76	—
Honduras	7	—	5	—	53	—	51	—
Jamaica	—	—	5	—	—	—	76	—
Mexico	9	—	6	—	29	—	25	—
Nicaragua	16	—	15	—	44	—	—	—
Panama	5	—	5	—	17	—	14	—
Paraguay	10	—	13	—	24	—	37	—
Peru	14	—	13	—	24	—	17	—
Suriname	—	—	65	—	57	—	52	—
Trinidad and Tobago	—	—	—	—	41	—	—	—
Uruguay	10	—	17	—	17	—	—	—
Venezuela	13	—	11	—	23	—	18	—

—Not available.
Sources: World Bank (1980a), Tan (1985), and other World Bank data.

Appendix Table 6. Allocation of Public Recurrent Expenditure on Education by Level, 1965–80
(*percent*)

Region and level of education	*1965*	*1970*	*1975*	*1980*
East Africa				
Primary	68.8	53.2	56.5	56.1
Secondary	25.2	32.2	26.0	22.4
Higher	6.1	14.6	17.5	21.5
West Africa				
Primary	54.3	50.7	44.4	46.9
Secondary	30.2	30.0	30.6	30.5
Higher	15.4	19.3	24.9	22.6
East Asia and Pacific				
Primary	67.3	57.4	54.4	46.3
Secondary	23.5	27.2	29.5	35.1
Higher	9.2	15.4	16.1	18.5
South Asia				
Primary	50.6	44.8	46.4	43.7
Secondary	26.7	36.7	34.2	34.4
Higher	22.7	18.5	19.4	21.9
Latin America				
Primary	62.4	57.4	51.7	50.9
Secondary	23.3	26.7	25.0	25.6
Higher	14.3	15.9	23.4	23.5
Europe, Middle East, and North Africa				
Primary	60.4	48.7	45.8	45.8
Secondary	29.1	33.0	32.4	32.5
Higher	10.4	18.3	21.8	21.7
Developed countries				
Primary	44.7	39.7	38.0	36.6
Secondary	41.4	41.8	42.7	44.3
Higher	13.9	18.6	19.4	19.1

Note: Within each region and for each year, the figures may not exactly add up to 100 percent because of rounding errors.
Source: Unesco, *Statistical Yearbook*, various issues.

Appendix Table 7. Cost Recovery by Educational Level, around 1980

Region and country	User fees as percentage of unit public cost		
	Primary	Secondary	Higher
East Africa			
Botswana	0	2.7	0
Burundi	0	6.3	14.8
Kenya	4.0	43.7	0
Lesotho	9.0	42.1	5.0
Malawi	37.0	38.0	1.0
Mauritius	0	0	0
Somalia	0	0	0
Sudan	—	—	0
Swaziland	7.0	26.3	—
Tanzania	0	0	0
Uganda	27.0	24.3	—
Zambia	3.0	11.6	—
Zimbabwe	0	5.0	—
West Africa			
Burkina Faso	13.0	0	0
Central African Republic	2.5	2.7	—
Guinea	0	0	0
Mauritania	0	0	0
Nigeria	30.0	39.0	12.4
Sierra Leone	1.5	20.3	—
Togo	13.0	5.0	—
Asia			
India	2.0	18.5	29.1
Indonesia	0	8.0	13.0
Korea	3.7	41.2	23.4
Malaysia	5.0	5.0	5.8
Pakistan	1.2	1.8	2.1
Philippines	—	—	3.7
Thailand	0	12.5	6.9
Solomon Islands	0	25.0	0
Turkey	0	0	15.0
Yemen Arab Rep.	0	0	—
Latin America and the Caribbean			
Bolivia	0.8	0.4	1.0
Brazil	—	—	5.0
Chile	1.6	0.9	25.0
Colombia	—	—	3.4
Costa Rica	0.3	0.5	8.0
Dominican Republic	0	0	1.0
Ecuador	0	0	2.0
Guatemala	—	—	10.0
Haiti	6.8	3.4	—
Honduras	0	9.6	10.0
Mexico	—	—	0.3–70
Paraguay	4.1	2.0	0.7
Uruguay	0.5	0.4	5.0

—Not available.

Sources: East Africa calculated from Wolff (1984); West Africa and Asia calculated from Ainsworth (1984), Jimenez (forthcoming), World Bank (1985a), and Tilak and Varghese (1985); Latin America and the Caribbean calculated from Schiefelbein (1985), except for Colombia, from Gomez (1984), and Bolivia and Haiti, from Ainsworth (1984).

Appendix Table 8. Yearly Student Allowances and Average Wages, Higher Education, Selected West African Countries, 1982

Country	Discipline	Amount (U.S. dollars)	Allowances as percentage of unit public cost	Allowances as percentage of average value added per worker in		Allowances as percentage of public sector salary		Estimated private expenses as percentage of allowances[a]
				Industry	Services	Starting	Average	
Benin	Law and social science	480	51.2	40.9	40.0	47.0	35.5	32.6
	Science	819	40.7	69.8	68.3	80.1	60.5	
	Arts and letters	733	44.4	62.5	61.1	71.7	54.1	
	Medicine	1,313	53.8	111.9	109.4	128.4	97.0	
Burkina Faso	All	1,408	53.7	—	—	70.8[b]	62.5	43.2
Cameroon	Law and social science	1,058	59.5	—	—	—	32.1	19.8
	Science	1,342	48.4	—	—	—	44.4	
	Arts and letters	993	41.3	—	—	—	32.9	
	Medicine	1,872	25.1	—	—	—	62.0	
Côte d'Ivoire	All	2,128	54.6	—	—	—	23.6[c]	59.5[d]
Niger	All	1,567	65.2	—	—	73.7[e]	42.9[f]	—
Senegal	All	557	38.8	24.3	14.2	—	—	—

—Not available.

a. Food, lodging, transportation. The amounts of tuition and fees are negligible in these countries. For Benin and Cameroon, figures are averages across all disciplines.

b. As percentage of starting teachers.

c. As percentage of average salary of an assistant (lowest ranking faculty) of the University of Abidjan.

d. Expenses are for the University of Abidjan.

e. As percentage of primary school teachers' average salary.

f. As percentage of secondary school teachers' average salary.

Source: Eicher (1984), Perrot (1984a and b), Cuenin (1984), Rasera (1984), Adade (1984) for allowances and expenses figures; World Bank data for value added and wage figures.

Appendix Table 9. Share of Direct Payments to Students in the Education Budget by Level, around 1980
(*percent*)

Region and country	Education level		
	Primary	Secondary	Higher
East Africa			
Botswana	—	1.2	25.7
Burundi	—	28.5	40.2
Comoros	—	24.0	93.3
Ethiopia	0.7	3.2	—
Lesotho	0.1	0.5	—
Madagascar	—	4.5	—
Mauritius	5.7	0.7	—
Rwanda	—	—	27.7
Zambia	0.2	17.8	18.6
Zimbabwe	2.3	11.5	6.0
West Africa			
Burkina Faso	—	30.2	72.6
Congo, P. Rep. of	0.5	14.0	65.4
Mali	—	37.8	77.8
Mauritania	—	30.3	62.1
Senegal	4.2	12.9	—
Togo	—	7.0	49.9
East Asia and Pacific			
Korea, Rep. of	0.6	2.3	3.6
Malaysia	4.0	7.6	12.3

Appendix Table 9 (*continued*)

Region and country	Education level		
	Primary	*Secondary*	*Higher*
Singapore	1.0	1.7	0.1
Thailand	4.9	4.6	6.2
South Asia			
Bangladesh	45.4	5.2	9.0
Nepal	—	—	8.0
Latin America and the Caribbean			
Argentina	—	—	0.6
Bolivia	—	—	2.7
Chile	10.5	0.4	2.5
Costa Rica	—	8.6	—
Dominican Rep.	1.6	3.0	—
Grenada	1.6	—	—
Guyana	—	1.0	28.3
Haiti	3.1	3.7	4.2
Honduras	0.0	4.1	1.8
Jamaica	5.2	2.0	1.8
Mexico	0.1	0.0	0.0
Nicaragua	—	1.7	—
St. Lucia	0.1	13.3	100.0
Trinidad and Tobago	6.7	9.8	—
Uruguay	5.3	0.3	29.9
Venezuela	6.7	6.1	19.2
Europe, Middle East, and North Africa			
Afghanistan	2.0	3.8	6.2
Algeria	0.3	9.4	46.3
Cyprus	0.8	2.9	22.7
Ireland	5.0	6.0	6.9
Israel	0.5	0.5	1.6
Jordan	—	—	32.4
Kuwait	5.0	6.1	12.7
Morocco	0.7	3.8	51.5
Portugal	2.6	4.8	13.4
Syria	—	0.3	—
Tunisia	1.1	2.6	—
Turkey	2.4	3.7	6.5
Yugoslavia	—	—	9.5
Western industrial countries			
Austria	0.2	1.6	16.2
Belgium	0.0	0.0	2.4
Canada	—	—	12.0
Denmark	4.5	3.7	7.0
Finland	18.1	18.8	18.0
France	6.2	15.9	8.6
Germany, Fed. Rep. of	—	4.8	16.3
Japan	9.4	4.3	0.5
Luxembourg	0.0	0.0	47.0
Netherlands	0.2	4.0	9.0
New Zealand	4.2	4.0	16.8
Norway	5.2	3.4	0.4
Switzerland	—	—	4.5
United Kingdom	9.7	6.4	32.5

—Not available.

Note: Figures refer to all forms of financial aid given directly to students, such as boarding, meals, transport, and medical services. They do not include implicit subsidies as a result of free tuition.

Source: Unesco, *Statistical Yearbook*, 1984.

Appendix Table 10. Annual Expenditure per Primary School Pupil, 1970 and 1980, for Developing Countries
(constant 1980 U.S. dollars)

Region and country	All recurrent expenditure		Instructional material[a]
	1970	1980	1980
Sub-Saharan Africa			
Botswana	69	107	—
Burkina Faso	—	65	0.26
Burundi	—	50	0.20
Central African Republic	—	70	0.49
Côte d'Ivoire	141	226	5.20
Ethiopia	—	28	—
Gambia	—	83	3.66
Ghana	220	112	5.63
Guinea-Bissau	—	—	1.41
Kenya	52	59	—
Madagascar	—	33	0.53
Malawi	29	12	0.53
Mali	—	59	2.63
Mauritania	242	—	—
Mauritius	90	180	—
Nigeria	—	68	—
Rwanda	25	26	0.97
Sudan	88	109	—
Swaziland	—	66	4.97
Tanzania	52	28	4.47
Uganda	767	393	—
Zambia	78	75	1.96
Zimbabwe	84	118	0.47
Middle East and North Africa			
Algeria	—	191	0.57
Iran, Islamic Rep. of	218	460	—
Kuwait	1,890	1,811	105.00
Morocco	132	164	0.98
Syrian Arab Rep.	93	113	2.29
Tunisia	—	175	9.29
East Asia			
Fiji	145	195	2.14
Hong Kong	166	373	4.85
Korea, Rep. of	79	181	1.45
Philippines	59	39	0.11
Singapore	172	389	—
Thailand	43	82	3.78
South Asia			
Afghanistan	12	24	3.15
Bangladesh	40	7	—
Burma	11	7	—
India	—	24	—
Nepal	—	12	0.91
Pakistan	15	18	
Sri Lanka	35	—	—
Latin America			
Argentina	248	488	38.60
Bolivia	111	120	—
Chile	—	340	20.43
Costa Rica	200	359	0.71
Dominican Republic	48	44	—
Ecuador	74	84	0.67
El Salvador	73	87	—
Guatemala	85	66	0.33
Guyana	65	85	5.12
Haiti	—	16	0.38
Honduras	76	88	2.30
Jamaica	90	159	3.51
Mexico	114	214	—
Nicaragua	91	60	1.33
Panama	159	201	2.61
Peru	78	152	1.37
Suriname	—	452	32.56
Trinidad and Tobago	284	478	7.66
Uruguay	—	309	15.81
Venezuela	363	178	1.78
Industrial Countries			
Australia	1,536	—	—
Austria	1,052	1,942	42.74
Belgium	—	2,267	2.26
Canada	1,125	2,642	264.22
Denmark	2,267	4,846	232.62
Finland	1,770	2,560	145.98
France	964	1,090	2.18
Germany, Fed. Rep. of	737	1,019	—
Italy	660	906	4.53
Japan	728	1,431	93.07
Luxembourg	809	3,729	37.29
New Zealand	658	1,240	69.45
Norway	2,077	5,381	226.02
Spain	26	67	—
Sweden	4,437	6,913	165.93
Switzerland	1,814	3,888	136.08
United States	1,354	2,181	54.55

— Not available.
a. Refers to annual expenditure for instructional material excluding teacher salaries.
Source: Unesco, *Statistical Yearbook*, 1983.

Appendix Table 11. Repetition and Survival Rates in Primary Schooling, Latest Year Available

Region and country	*Percentage repeating last grade*	*Percentage surviving to last grade*
East Africa	11.4	70.5
Botswana	0.6	79.8
Burundi	52.7	94.3
Kenya	12.7	68.5
Lesotho	11.5	44.0
Malawi	13.0	33.1
Rwanda	8.8	62.8
Seychelles	0.0	97.7
Swaziland	12.4	72.8
Tanzania	0.0	79.7
Uganda	12.3	57.6
Zambia	1.4	84.6
West Africa	32.1	70.2
Benin	16.7	63.0
Burkina Faso	41.4	74.9
Cameroon	40.5	67.0
Central African Rep.	44.1	52.6
Congo, P.R.of	23.4	74.2
Côte d'Ivoire	46.8	88.9
Gabon	21.4	58.8
Gambia	38.2	92.3
Ghana	1.0	74.7
Mali	32.0	60.7
Mauritania	30.0	79.5
Niger	36.0	66.8
Senegal	35.9	85.9
Togo	42.5	42.9
Asia	9.1	56.9
Bangladesh	8.0[a]	20.4[a]
Bhutan	14.3	24.8
Burma	14.1[a]	32.1[a]
India	13.9[a]	38.0[a]
Indonesia	1.7	68.1
Malaysia	—	97.2
Philippines	1.5	71.5
Singapore	10.2	90.0
Solomon Islands	9.9	76.7
Sri Lanka	8.2	90.8
Latin America and the Caribbean	6.1	61.2
Brazil	18.2	36.4
Costa Rica	2.2	74.9
Ecuador	5.0	61.6
El Salvador	3.3	11.7
Grenada	5.4	83.6
Guatemala	2.3	38.4
Guyana	6.0	84.2
Haiti	7.5	45.4
Jamaica	7.6	79.5
Mexico	1.3	65.6
Nicaragua	3.5	26.8
Panama	3.4	72.8
Paraguay	2.8	48.0
Peru	7.6	70.2
Suriname	22.5	68.8
Trinidad and Tobago	1.7	77.8
Uruguay	6.7	88.1
Venezuela	2.8	67.5
Europe, Middle East, and North Africa	13.3	79.9
Afghanistan	10.0	59.5
Algeria	18.7	76.5
Egypt	3.7	64.3
Greece	0.1	93.0
Iraq	8.5	87.2
Jordan	7.4	97.0
Morocco	49.2[a]	79.9
Oman	14.3	60.1
Saudi Arabia	6.3	79.4
Syria	7.8	86.5
Tunisia	25.0	78.0
United Arab Emirates	9.1	97.0
Developed countries	8.5	91.1
Belgium	21.4[a]	75.0
France	10.6	94.6
Italy	1.1	99.8
Netherlands	1.0	95.0

— Not available.

a. Figure is for fifth grade instead of sixth.

Source: Unesco, *Evolution of Wastage in Primary Education in the World between 1970 and 1980* (Paris: Division of Statistics on Education, Office of Statistics, October 1984).

Appendix Table 12. Primary School Enrollment, GNP Per Capita, and Mean Test Scores of Ten- to Fourteen-Year-Olds in Selected Countries

Country	Gross primary school enrollment ratio 1971	1971 GNP per capita (1971 U.S. dollars)	Mean test score	
			Science	Reading comprehension
India	68	110	20.6	5.2
Uganda	49	130	45.4[a]	—
Botswana	48	160	10.6[a]	—
Bolivia	71	190	24.8	—
Thailand	82	210	28.2	—
Egypt	70	220	19.7[a]	—
Paraguay	107	280	24.8	—
El Salvador	71	320	20.8[a]	—
Colombia	110	370	24.0	—
Iran	76	450	19.8	7.8
Brazil	71	460	33.0	—
Peru	127	480	24.8	—
Mexico	107	700	26.4	—
Chile	109	760	20.8	14.1
Hungary	99	1,200	38.9	—
Argentina	105	1,230	28.8	—
Italy	106	1,860	28.1	27.9
Japan	100	2,130	40.9	—
Scotland	112	2,430	32.9	—
England	112	2,430	31.7	—
New Zealand	104	2,470	34.8	—
Finland	120	2,550	31.0	—
Netherlands	102	2,620	28.9	25.2
Australia	105	2,870	35.6	—
French Belgium	100	2,960	26.7	—
Flemish Belgium	100	2,960	31.9	—
Germany, Fed. Rep. of	127	3,210	34.6	—
Sweden	98	4,240	32.7	—
United States	110	5,160	32.8	27.3

— Not available.

a. Refers to score on mathematics test.

Sources: For science scores, Heyneman and Loxley (1983); all tests were designed by the International Association for the Evaluation of Educational Achievement (IEA). For reading comprehension scores, Thorndike (1973).

Appendix Table 13. Percentage Share of Educational Subsidies by Income Group

Country (source)	Year of data	Subsidy	Income group: Poorest 40 percent	Middle 40 percent	Upper 20 percent
Colombia (Selowsky 1979)	1974	Primary	59	36	6
		Secondary	39	46	16
		University	6	35	60
		All levels	40	39	21
Malaysia (Meerman 1979)	1974	Primary	50	40	9
		Secondary	38	43	18
		Postsecondary	10	38	51
		All levels	41	41	18
			Poorest 40 percent	*Middle 30 percent*	*Upper 30 percent*
Indonesia (Meesook 1984)	1978	Primary	51	27	22
		Junior secondary	45	21	33
		Senior secondary	22	23	55
		University	7	10	83
		All levels	46	25	29
			Poorest 30 percent	*Middle 30 percent*	*Upper 40 percent*
Chile (Castaneda 1984)	1983	Preprimary	50	35	15
		Primary	53	29	18
		Secondary	37	35	28
		University	15	24	61
		All levels	39	29	32

Note: All rows total 100 percent except for rounding.

Appendix Table 14. Distribution of Enrollment and Population by Socioeconomic Status, around 1980

Region and socioeconomic status[a]	Percentage of enrollment			Percentage of total population[b]
	Primary	Secondary	Higher	
Anglophone Africa (6)				
Farmers	74	36	39	76
Manual workers and traders	18	29	21	18
White-collar	8	35	40	6
Francophone Africa (4)				
Farmers	61	36	39	76
Manual workers and traders	26	27	21	18
White-collar	13	37	40	6
Asia (4)				
Farmers	53	25	19	58
Manual workers and traders	34	43	38	32
White-collar	13	32	43	10
Latin America (6)				
Farmers	31	12	10	36
Manual workers and traders	52	54	45	49
White-collar	17	34	45	15
Middle East and North Africa (4)				
Farmers	39	15	22	42
Manual workers and traders	49	57	31	48
White-collar	12	28	47	10
OECD (13)				
Farmers	12	11	11	12
Manual workers and traders	53	45	32	53
White-collar	35	44	57	35

a. The number of countries in each region is indicated by the figure in parentheses.
b. The total population figures refer to the population of parents with school-age children.
Source: Mingat and Tan (1986a).

Appendix Table 15. Price and Income Elasticities of Demand for Education: Micro Estimates

Area and year of data	Behavior variable	Elasticity	
		Income[a]	Price[b]
Colombia (1967–68)	Total spending on education	1.045	i
	Share of household budget on education	0.334	i
	Actual expenditure and predicted expenditure	1.343	−0.67
El Salvador (1980)	Total spending on education		
Santa Ana		0.967	i
Sonsonate		0.023	i
Mali (1982)	Enrollment ratio	—	−0.98
Malawi (1983)	Household enrollment ratio	—	−0.03
Malaysia (1976)	Proportion of children going to school		
	6–11 years	0.097	−0.039
	12–18 years	0.318	−0.012
Pakistan (1978–79)	Proportion of children going to school	0.01–0.15	—
Philippines	Years of completed schooling		
1968	First estimate	0.111	−0.05
1968	Second estimate	0.111	−0.008
1975	Enrollment rates	—	−0.625
Taiwan (1950–69)	Number of people taking college entrance examination[c]	0.303	1.763
Tanzania (1981)	Total spending on education	0.03	—

i Inelastic.
— Not available.

Note: Results for Colombia, El Salvador, Malawi, Mali, and Philippines, 1975, are based on household-level analysis; in the other countries, they are based on individual-level analysis.

a. The income measure for Colombia, Malawi, and Tanzania is father's income; for El Salvador, household permanent income; for Mali and Malaysia, household income; for Pakistan and Taiwan, household income per capita; for Philippines, 1968, father's wage; and for Philippines, 1975, landownership.

b. The price measure for Colombia, El Salvador, and Malawi is the cost burden of educating the number of children of school age, at the current fee structure and private costs; for Mali, the amount of fees paid to parents' association; for Malaysia and Philippines, 1975, distance to school; for Philippines, 1968, first estimate, mean wage for children aged 7–14; for Philippines, 1968, second estimate, mean wage for children aged 15–19; for Taiwan, average tuition and fees.

c. Study differs from the rest because it uses time-series macro data.

Sources: Jimenez (forthcoming) except for Philippines, 1968, second estimate (King and Lillard 1983) and for Malaysia (de Tray 1984).

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The educational systems in developing countries must continue to improve in quality, in efficiency, and in equality of opportunity if they are to go on serving as important instruments for raising levels of national economic well-being. Yet budgetary austerity tightens the public purse-strings everywhere, ever increasing school-age populations stretch these dwindling resources even further, and other social and economic sectors present compelling competition for the same funds.

In such an environment, this book argues, the heavy subsidization of education implicit in traditional policy—especially of higher education at the expense of primary schooling—with its concomitant economic inefficiencies and inequities is no longer appropriate. Marshaling a wealth of hard empirical evidence, the book examines the potential effects of policy alternatives in several areas of education financing and management:

- The contribution of private financing and selective user charges, especially in higher education, and reallocation of public spending
- Selective student loan and scholarship programs in higher education
- Decentralization and the role of private and community schools

None of these policies is really new, the authors point out, but implementing them may be made difficult because of conflicts with traditional educational and political philosophies and established administrative institutions.

Supporting the analysis, the book contains a host of statistical tables on educational financing and demography and case studies of specific policy problems and instances of reform in developing countries.

George Psacharopoulos is chief of the research division of the World Bank's Education and Training Department. Emmanuel Jimenez, on leave as assistant professor of economics, University of Western Ontario, is an economist with the Education and Training Department, as is Jee-Peng Tan.

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Education for Development
An Analysis of Investment Choices
George Psacharopoulos and Maureen Woodhall

For more than twenty years the World Bank has been lending for educational projects in developing countries. Out of that experience comes this book, which brings together the results of research and development both within and outside the Bank, including much material not widely available until now. The authors examine theoretical and practical issues that face policymakers, planners, and administrators in developing countries as they choose among strategies for investment in education. Among the topics discussed are the contribution of education to economic and human development, cost-benefit analysis, the demand for educated manpower, finance, the efficiency and quality of education, equity considerations, and the links between investment in education and in other sectors.

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